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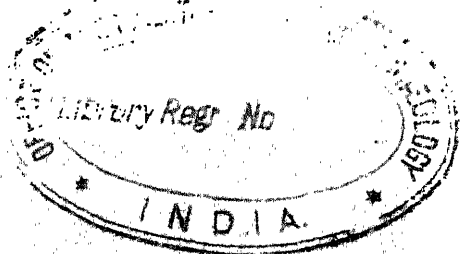
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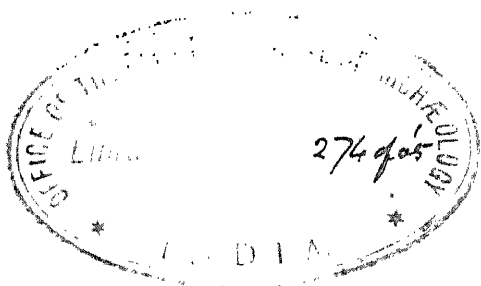
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A DESCRIPTIVE
HANDBOOK OF ARCHITECTURE





FRENCH GOTHIC SCULPTURE
AMIENS. CIRCA 1240.



FRENCH GOTHIC SCULPTURE
RHEIMS. CIRCA 1250

A
DESCRIPTIVE HANDBOOK
OF
ARCHITECTURE

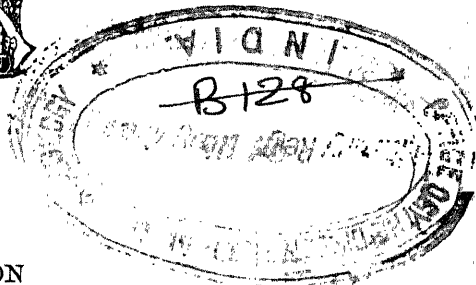
BY

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OXFORD AND CAMBRIDGE LOCAL EXAMINATIONS, AND TO THE EDUCATION BOARD OF
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PREFACE

WITHIN the limits of a small work of this kind it is not possible to do more than outline the various styles of Architecture, and to trace briefly their development. The subject is, however, of so much importance that a good purpose may be served by an elementary text-book on simple lines and of not too technical a character. A list of reference books will be found on p. xi of this volume for those who wish to study the subject in further detail. The easy conditions of travel at the present time, and the prospect in the near future of even greater facilities, should make all thoughtful people eager to acquire some knowledge of Architecture, so that nothing of interest in this great art may be lost when visiting cities remarkable for their buildings either at home or abroad.

To the young in particular, whether at home or at school, it is hoped this book will be useful. It is indeed surprising that in most of our great public schools no provision whatever is made for the future Architectural student, whereas the best teaching and equipment is as a rule provided for boys destined to enter the engineering profession; the youthful architect, however, has to begin his special training after he has left school and the University.

A course of Historical Architecture should form a regular part of the school curriculum, as a practical study if not as

PREFACE

a branch of æsthetics. It was this constant study and practice by the young in mediæval times that developed those remarkable men whose unparalleled efforts in architecture, painting, and the allied arts produced monuments still in our possession, of such amazing artistic skill and intelligence, to be at once our glory and our shame. Our disregard of this careful and diligent training of the young during the last century accounts in a large measure for our present ineptitude in all matters of art.

My thanks are due to Mr. H. Grairs of the Board of Education, and to Mr. Howard Travers of Norwich, for the many valuable photographs which they have kindly placed at my disposal, and also to Mr. F. Woodhouse for his valuable suggestions and help so generously given.

MARTIN A. BUCKMASTER.

17, *Coleherne Mansions, S. W.*

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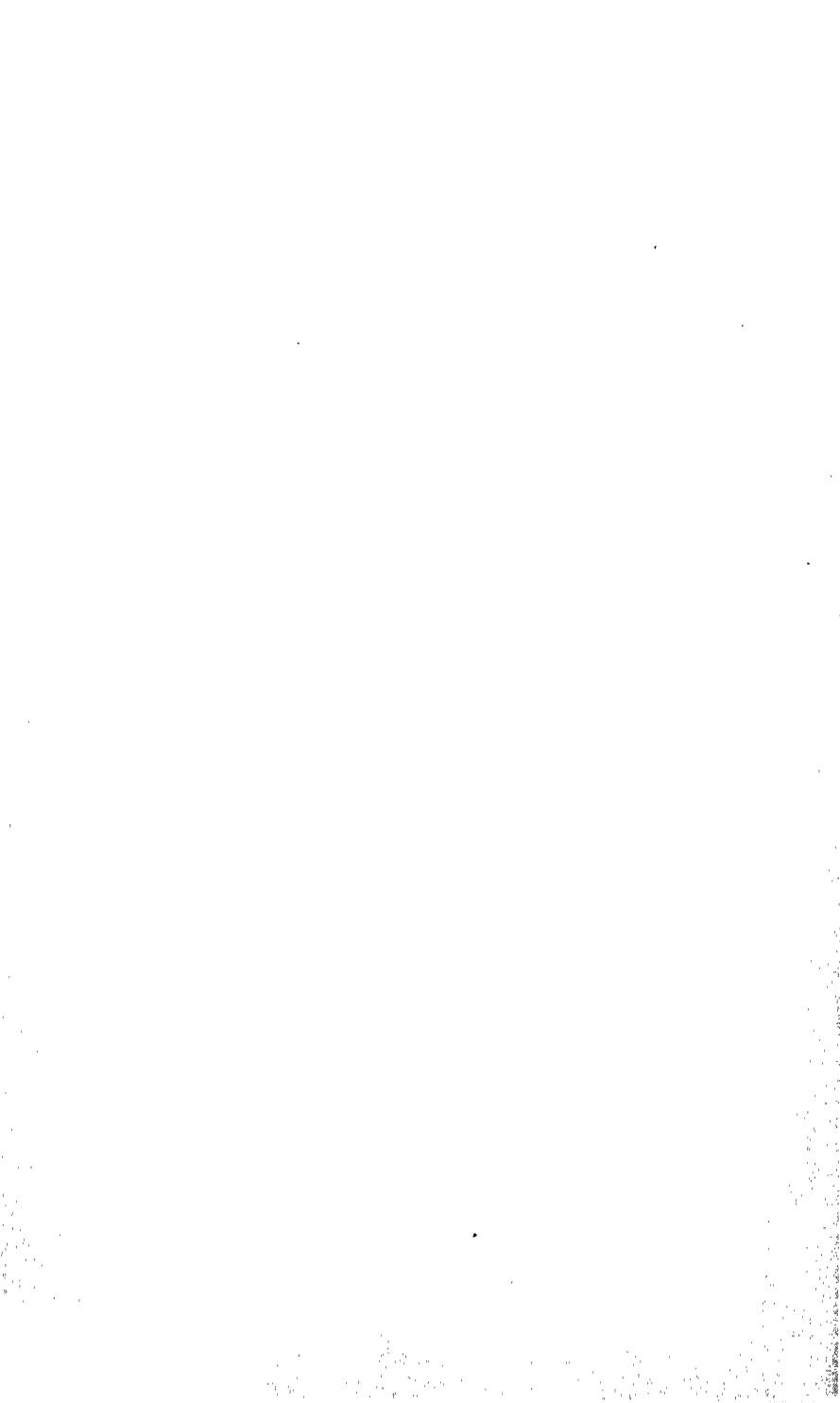
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CHAPTER I

CLASSIFICATION OF STYLES



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A DESCRIPTIVE HANDBOOK OF ARCHITECTURE

CHAPTER I

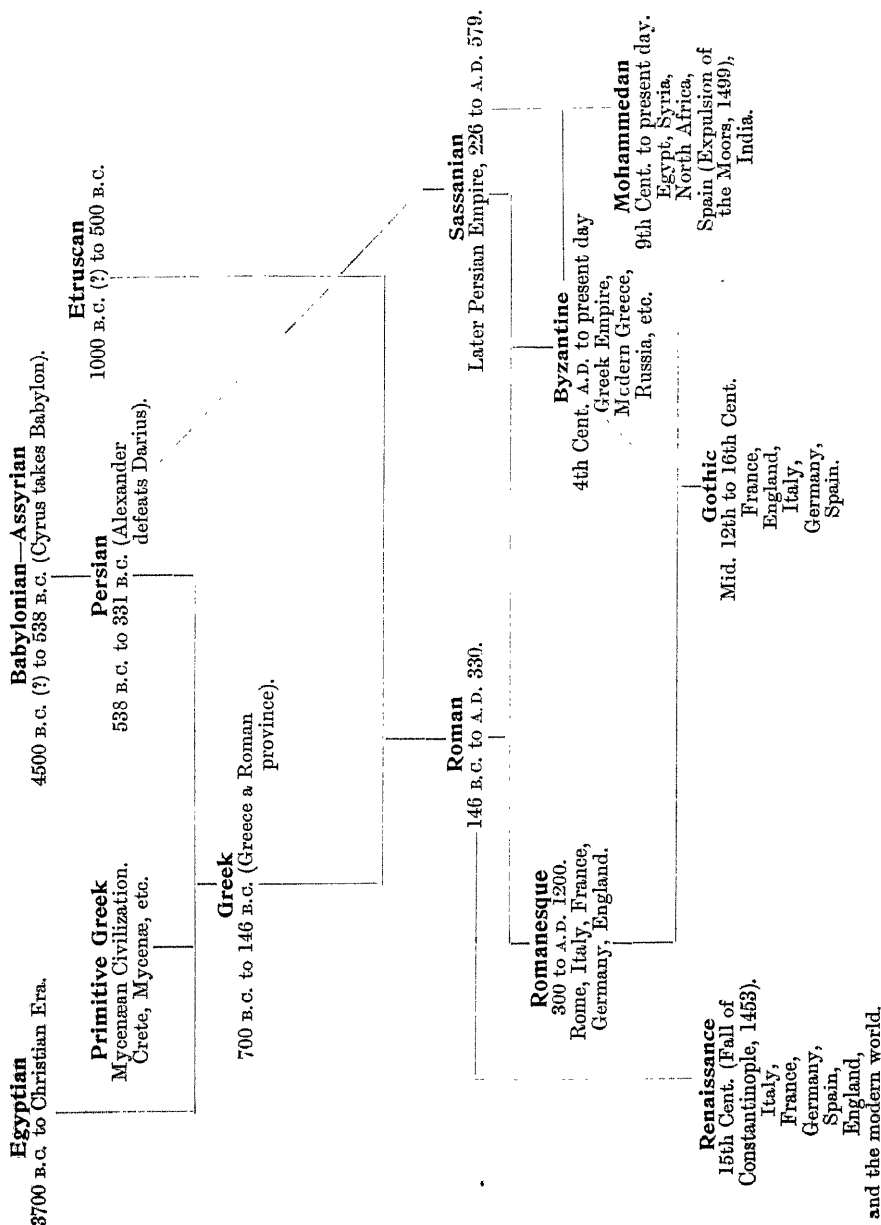
CLASSIFICATION OF STYLES

BUILDING is a natural development of man's mind from the earliest time, evolved from a few simple elementary ideas, and arising directly out of social needs. It can only reasonably be called Architecture when great ideas are scientifically and artistically combined and carried out in due proportion. On the Art side the design and embellishment, with all the beauty and poetry that arose from the embodiment of man's needs and thoughts, both social and religious; and on the Science side the construction and setting out of the various parts in his buildings accurately calculated for their respective positions.

The erection of structures devoid of beauty is building as a trade and not as an art. A plain brick or stone wall is not Architecture, but a city wall with arch construction, ramparts, parapets, and gateways is, for it is building with design, purpose and fitness. Other buildings, such as some bridges, viaducts, etc., where usefulness alone is considered, are in the main works of engineering skill and need not be considered as works of architecture.

CLASSIFICATION OF STYLES

A synopsis of all the historical periods from ancient times up to the present is given in the following table, in which the influences of the various styles upon one another may be readily traced. These styles denote types of construction and characteristic design, reflecting in a marvellous degree the moral, social, and religious habits and ideas of the times and places to which the various styles belong. It is not possible to take notice in this little book of half the styles given in this table, but it is well to remember that no style but the very earliest stands alone, uninfluenced by the preceding period, and of this earliest style our records are too sparse to allow us to judge definitely.



CLASSIFICATION OF STYLES

SYNOPSIS OF THE STYLES OF ARCHITECTURE

DIVISION I

Ancient Architecture

Egyptian

The Pyramids and Sphinx, *circa* 3700 B.C.

Temples of Karnac and Luxor, *circa* 1700 B.C.

Tombs at Beni Hasan, *circa* 2600 B.C.

Assyrian

Temple, Birs Nimroud, Southern Babylon.

Palace of Shalmaneser at Nimroud, Northern Nineveh, 850 B.C.

Palace of Sargon at Khorsabad, 720 B.C.

Persian

From Cyrus, 538 B.C., to Alexander, 333 B.C.

Palace and Hall of Xerxes at Persepolis, 480 B.C.

Palace at Susa, 405 B.C.

DIVISION II

Classic Architecture

Greek

The Parthenon, Doric, 440 B.C.

The Erechtheion, Ionic, 420 B.C.

The Choragic Monument of Lysicrates, Corinthian, 335 B.C.

Roman

The Temple of Fortuna Virilis, Ionic, 100 B.C.

The Temple of Castor, Corinthian, 7 B.C.

The Pantheon Portico,¹ Corinthian, A.D. 123.

¹ Portico originally decastyle, 27 B.C.

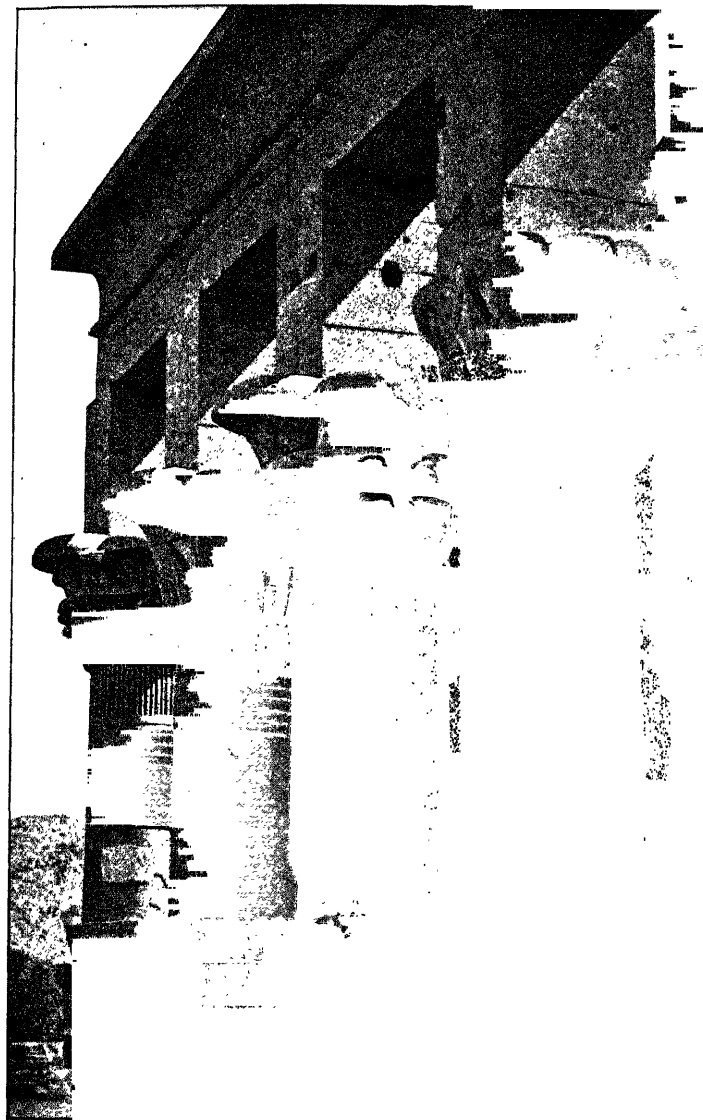


PLATE II.—EGYPTIAN COLUMNS AT PHILÆ

CLASSIFICATION OF STYLES

The Colosseum, A.D. 70, the three orders superimposed.
The Baths of Caracalla, A.D. 212.

DIVISION III

Mediæval Architecture

Byzantine in the Eastern Roman Empire and Italy (Ravenna and Venice).

Romanesque in Italy, France, Germany, and England.

Examples : Santa Sophia, Constantinople, A.D. 532 } Byzantine.
St. Vitale, Ravenna, A.D. 547
St. Mark's, Venice, A.D. 977
S. Maria Maggiore, Rome, A.D. 432.
St. Michael, Pavia, 12th Cent.
Spire Cathedral, 1030.
St. Etienne, Caen, 1066.
Durham Cathedral (nave), 1090.

Gothic or Pointed Architecture

Earliest important buildings :

France— St. Denis, 1144.
England— Canterbury, 1174.
Lincoln, 1192.
Germany— Magdeburg, 1208.

English Periods

Early English, 1189—1307.
Decorated, 1307—1377.
Perpendicular, 1377—1509.
Renaissance in England.
Tudor.
Elizabethan.
Classic and Gothic Revival.
Georgian and Early Victorian.

CLASSIFICATION OF STYLES

Egyptian and Assyrian

The history of Egypt, written on their marvellous buildings, extended from about 4400 to 340 B.C., after which time the Ptolemys founded a dynasty which lasted till 30 B.C.



Columns at Thebes

The thirty Egyptian dynasties may be conveniently divided into three groups. The Ancient Empire, 4400—2400 B.C. The Middle Empire, 2400—1200 B.C. The New Empire, 1200—340 B.C.

CLASSIFICATION OF STYLES

The capitals of the Ancient Empire, Memphis and Abydos; the Middle Empire, Thebes with Luxor; the New, Sais and Bubastes. There are valuable remains of all these periods; the Pyramids and Sphinx (see below) belong to the first. The temples of Luxor, and also the temples at Thebes, to the second, of which two columns from the north side are given as an excellent example of the hieroglyphics and carvings on the walls and capitals.



Sphinx and Pyramids

During the reign of Ptolemy IX, 170 B.C., the exquisite little temple on the island at Philæ was erected, and although not belonging to any of the three Egyptian empires already alluded to, it has all the beauty and massiveness of the finest Egyptian buildings. Note the capitals, which are of beautiful form and remarkable for their variation of design (see Plate II, p. 7).

The important Egyptian buildings were placed on the banks of the Nile. The Great Pyramid at Gizeh near Cairo was

CLASSIFICATION OF STYLES

erected by Cheops of the fourth dynasty, it covers a larger area than any other building, and is, in plan, a square 760 feet each side. It was built as a tomb for the king. Close by crouches the Sphinx, a colossus mainly cut out of the solid rock; 188 feet long and 65 feet high; it was excavated from the sand in 1816, when a temple was found between its paws.

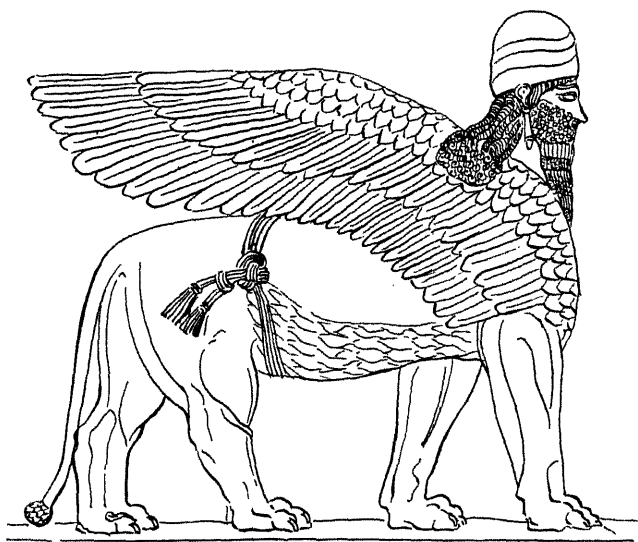
The familiar obelisks, huge stone monoliths, were as a rule placed in front of the principal entrance of a temple arranged in pairs. They are square in section, tapering and terminating in a pyramidal apex, the four faces being incised with hieroglyphics. Some of these huge monoliths are supposed to have been quarried 800 miles from the site of their erection, their transportation being accomplished without the help of steam or other mechanical aids at present in vogue. The buildings of the ancient Egyptians, all of the lintel type, were most scientifically constructed, the masonry was excellent, the large blocks of stone of which their temples are composed are well squared, and so laid that the joints are scarcely visible. On the Art side these buildings have a grandeur peculiarly their own, imposing in effect from their solidity and symbolical significance; it is a style, however, so massive and costly that it can admit of no revival at any future time.

THE ASSYRIAN PERIOD of palace-building extended from 2230 B.C. to the destruction of Babylon by Cyrus, King of Persia, 538 B.C. Their history is one of incessant wars, the Northern Assyrian nation becoming the most powerful about 1100 B.C. Nineveh was destroyed 609 B.C., but rose anew until it was again destroyed by Cyrus, and mounds of ruins are now all that remain of the magnificent cities of Nineveh and Babylon.

During the Persian period, which terminated 331 B.C., many magnificent palaces and royal tombs were erected. The plan of the buildings was rectangular, with openings rectangular and sometimes arched with simple vaults, the materials employed being brick, marble, and alabaster. Their carvings,

CLASSIFICATION OF STYLES

which were full of action, depicted fights, processions, and hunting scenes. These reliefs can be well studied in the British Museum, where large fragments are preserved from the palaces of Nineveh (Koyunjik), Persepolis, and Pasargardæ. A drawing is given of the winged human-headed lion, and no better type could surely be found to symbolize intellect, strength, and rapidity of motion.



Assyrian Relief from British Museum

A further detailed account of ancient Architecture (Egyptian and Assyrian) cannot be given; these styles are only mentioned to show the continuous progression of building from Egyptian and Assyrian, through Greek and Roman, and so on to our own Gothic styles.

Before proceeding to a description of the Greek and Roman orders, brief notice should be taken of their ancient domestic

CLASSIFICATION OF STYLES

buildings, excellent opportunity for which is afforded by the cities of Pompeii, Herculaneum, and Stabiæ, buried by an eruption of Vesuvius in A.D. 79.

These houses were of two types—the *Domus* or private house, and the insular type, which were detached, being surrounded on all sides by streets. They were built on one fixed plan, varying chiefly in the size and number of apartments according to the wealth and position of the owner. The house was divided into two main divisions: the atrium, with its rooms on two sides, and the peristylum, leading off from which are the dining-rooms, bakery, kitchens, and other offices, etc.; they were usually of one storey in height, and on account of the brightness of the climate the openings were small. The house of Pansa at Pompeii, and many others, are sufficiently intact to allow of accurate plans being taken.

CHAPTER II

COMPARATIVE CLASSIC ARCHITECTURE

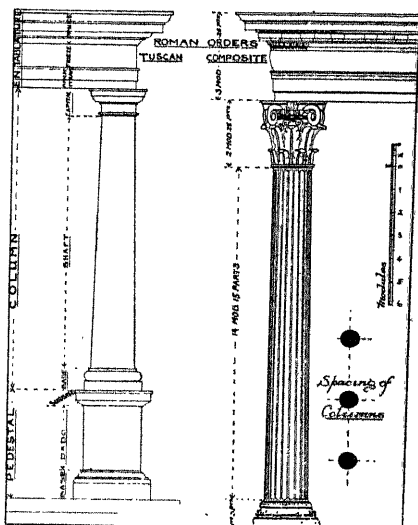
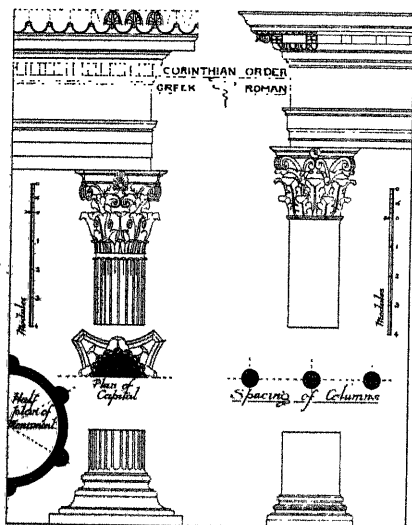
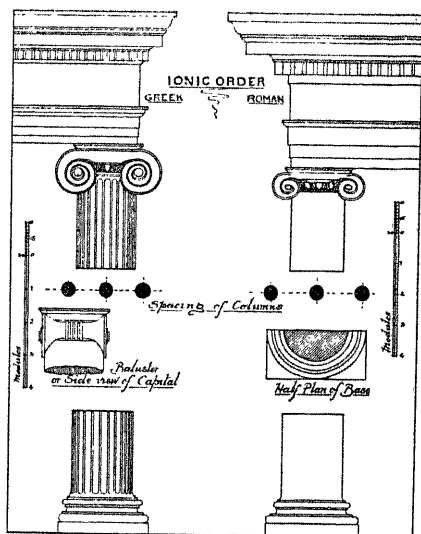
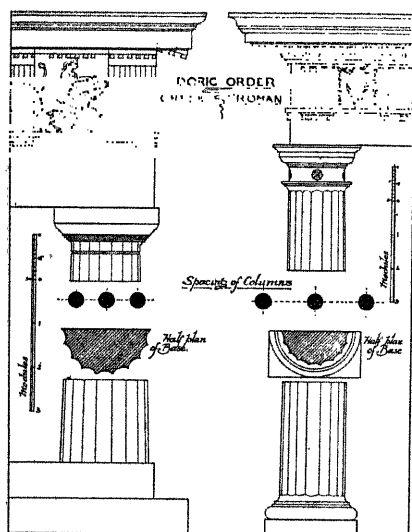


PLATE III.—THE ORDERS, GREEK AND ROMAN

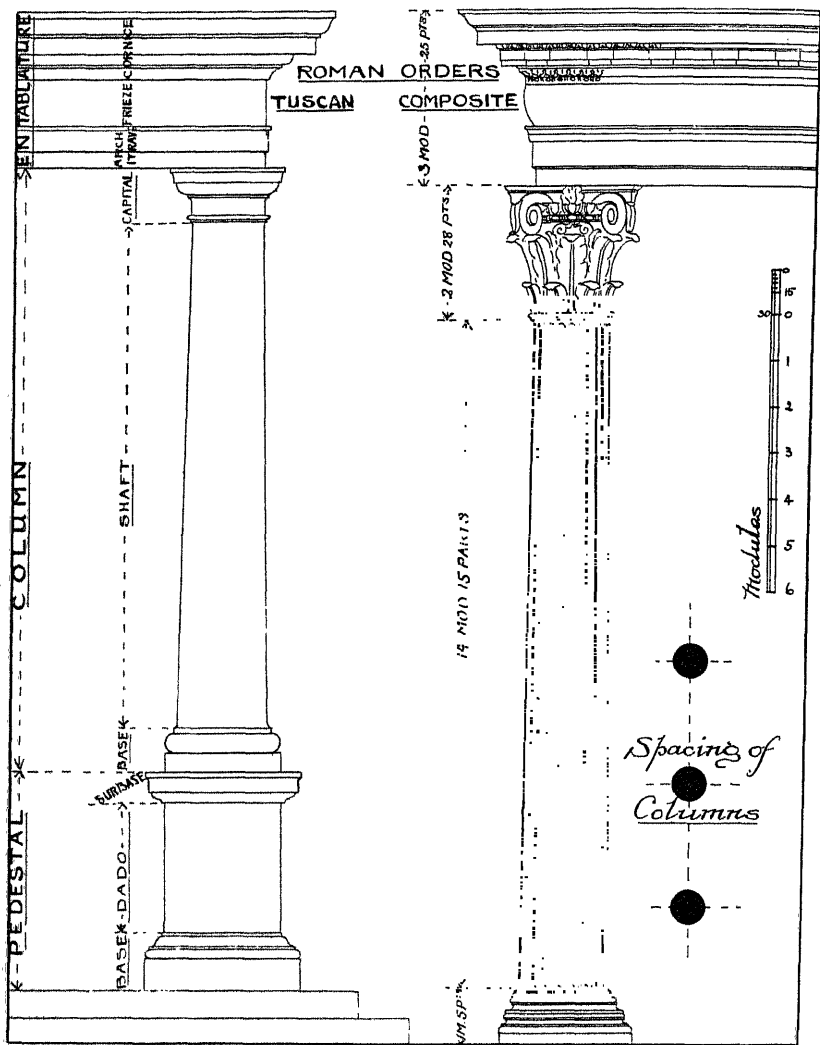


PLATE IIIa.—TUSCAN AND COMPOSITE ORDERS

CHAPTER II

COMPARATIVE CLASSIC ARCHITECTURE

IN comparing Greek and Roman Architecture we must do so through the "Orders," a term which although in common use is not in the least descriptive of any particular feature. This term "Order" refers to the column and entablature of a classic building, and in no sense describes the plan or internal arrangements.

The three Greek orders are the Doric, Ionic, and Corinthian, and to these three the Romans added the Tuscan and the Composite, the Tuscan being a poor form of Doric, and the Composite having a combination of Ionic and Corinthian capitals. We have therefore three chief orders which are purely Greek, but used by the Romans as well, and two adopted orders (Tuscan and Composite) used by the Romans only.

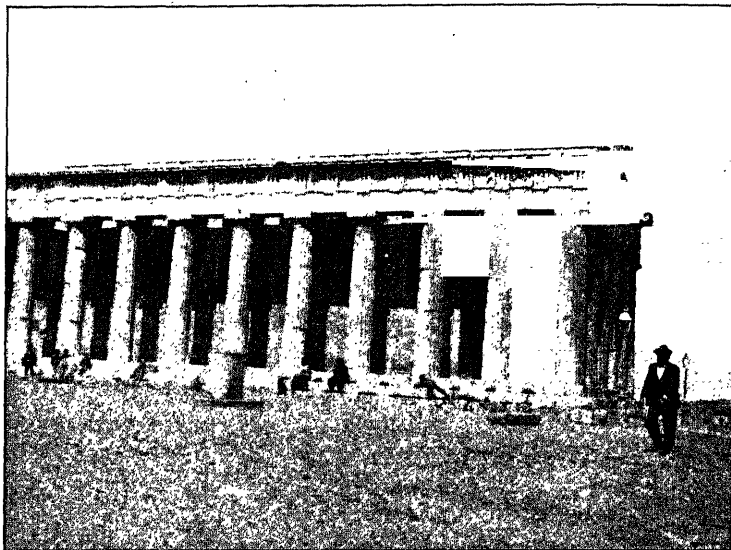
An Order has two main parts, the Column and the Entablature, and these again are sub-divided into three thus:—the entablature into *cornice* or crowning member, *frieze* or middle division, and *architrave* or lowest division. The column is divided into *capital*, *shaft*, and *base*. This will be the more readily understood by referring to the drawings of the Greek and Roman orders. A pedestal is given in the drawing of the Tuscan Order, but it is not an essential part of any order, although it was frequently employed in later work; it is divided into *subbase*, *dado*, and *base*, and is used when

COMPARATIVE CLASSIC ARCHITECTURE

additional height is required, as in the Arch of Constantine (A.D. 330).

The Doric Order, Greek and Roman

In describing these orders comparatively, I have grouped the similar Greek and Roman examples together, but the student must never forget the fact that the Greek orders are almost an



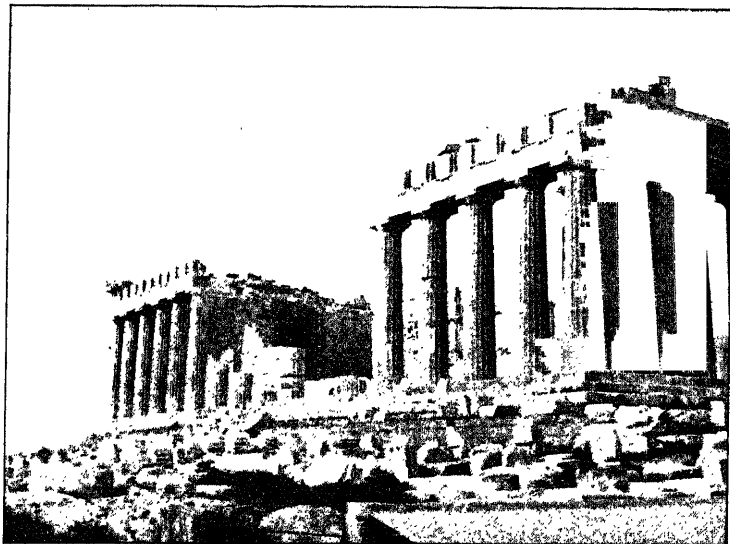
Temple of Theseus (or Hephaistos), Athens

original creation; suggestions may have been gathered from Egypt and Assyria, but such elementary ideas as may have been borrowed were so vastly improved by the Greeks as to create a quite distinctive style. The Romans on the other hand were frank copyists of these orders, they employed them in all manner of ways, adding to their usefulness, if not to their beauty, by the addition of the arch.

COMPARATIVE CLASSIC ARCHITECTURE

The Doric Order was a favourite one with the Greeks, but was not employed to any great extent by the Romans; the Parthenon and the Theseion, or Temple of Theseus, at Athens are of this order. The Greeks used it without a base, but the Romans in their examples added one.

Triglyphs¹ (blocks carved into three channels) are found on



The Parthenon, Athens

the friezes of both, but differently disposed. In the Greek example given in the illustrations (the Temple of Theseus, now known as the Temple of Hephaistos) it will be seen that the triglyph is placed at the extreme angle of the frieze, its inner boundary line being almost over the axis of the column, whereas in the Roman type this end triglyph is placed centrally, so that a line drawn through the axis of the column passes through the

¹ A glossary of technical terms will be found commencing on p. 165.

COMPARATIVE CLASSIC ARCHITECTURE

centre of the triglyph. The shapes of channels also differ, the Greek being curved at the top while the Roman are square. Small *guttae* or pegs are found above and below the triglyphs in the Greek Order, but below only in the Roman. Between these triglyphs on the frieze are square spaces called *metopes*, which are as a rule enriched with sculpture. With the Greeks these



Portion of Parthenon Frieze

relief carvings were of the highest merit, with the Romans meaningless and insignificant.

A Greek example from the British Museum is given of a portion of the frieze and a sculptured metope; the work on the metope, which is of surpassing excellence, depicts a fight between a Centaur and a Lapith. Although much damaged this group shows remarkable vigour and composition. The fragment of the frieze shows a small group of figures and horses moving along in the Panathenaic procession held in honour of the goddess Athene Polias. The whole of these magnificent sculptured decorations were executed by Phidias and his pupils

COMPARATIVE CLASSIC ARCHITECTURE

circa 440 B.C.; and a large number of them were brought to England by Lord Elgin and placed in the British Museum, 1816.

The full-page illustration (Plate III) is arranged to show a comparative view of the orders, Greek and Roman being placed side by side, and a scale of modules (a module being half the



Metope from the Parthenon

diameter of a column at its base) divided into thirty parts is given with each.

Doric

Ancient Examples, Greek

Temple at Corinth, 650 B.C.

The Parthenon, 438 B.C.

Temple of Zeus, Olympia, 436 B.C.

Temple of Theseus (or Hephaistos), 435 B.C.

The Temple of Zeus at Agrigentum in Sicily, 480 B.C.

COMPARATIVE CLASSIC ARCHITECTURE

Ancient Examples, Roman

The Theatre of Marcellus, Rome, 23 B.C.

The Ground Range of the Colosseum, Rome, A.D. 70.



Temple of Niké Apteros, Athens

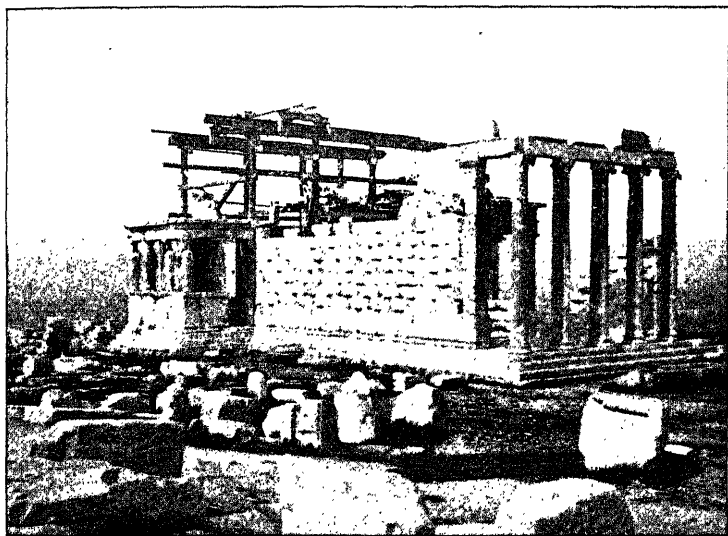
The Ionic Order, Greek and Roman

A marked difference is to be found between the Doric and Ionic orders, and this is particularly noticeable in the capitals, which in the Greek examples have large spiral volutes.

COMPARATIVE CLASSIC ARCHITECTURE

This form of capital is of doubtful origin, but was most probably derived from a bracket form influenced by Assyrian and Egyptian ideas. It passed through the usual modification and improvement that all borrowed detail did in the skilful hands of the Greeks.

The shaft of this order is channelled into twenty-four flutes separated by fillets instead of sharp edges (arris) as in the Doric ;



The Erechtheion, Athens

and the base is composed of a series of fillets and rounds divided by a hollow "scotia" moulding. The frieze is plain in both the examples given on p. 17, but in others it is enriched with sculptured figure reliefs as in the beautiful little fragment of the Temple of Niké Apteros at Athens.

It will be noticed on referring to Plate III that the Greek and Roman cornices are very similar in the arrangement of the mouldings, the dentels being slightly larger in the Roman

COMPARATIVE CLASSIC ARCHITECTURE

example. The architrave is divided similarly in both into three faces slightly projecting from the column upwards; it is, however, deeper and heavier-looking in the Roman type. The capital, the distinguishing feature of the order, has bold handsome volutes in the Greek, but in the Roman these are poor and insignificant, producing a capital of meagre effect.

The Erechtheion, of which an illustration is given, is one of the most unique of the Greek Ionic temples, or rather two temples grouped together with a north and south portico, the little south portico being famous for its Caryatid figure-supports used as columns. One of these Caryatid figures, and the "honeysuckle" ornament on the north wall frieze, may be seen in the Greek Room at the British Museum.

The Romans were not pleased with this order, and seldom used it in Rome itself with this flat form of capital, which shows an awkward "baluster" view (see Plate III) when seen from the side. They designed as a substitute for the Greek pattern a capital with the volutes placed anglewise, exhibiting a voluted face on all sides. The form of Ionic capital that has been extensively employed by English architects since the time of Sir Christopher Wren (1632—1723) was based on that of the Italian masters.

Ionic

Ancient Examples, Greece and Ionia

The Temple of Niké Apteros, Athens, 469 B.C.

The Temple on the Ilissus, Athens, 484 B.C.

The Erechtheion, Athens, 420 B.C.

¹ The Temple of Diana (later Temple), Ephesus, 320 B.C.

An earlier example, 560 B.C.

Ancient Examples, Rome

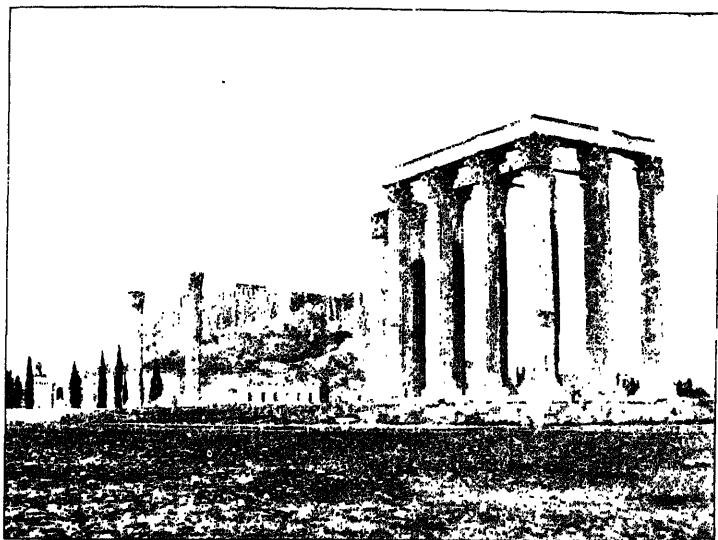
The Temple of Fortuna Virilis, Rome, 100 B.C.

The Second Range of the Colosseum, Rome, A.D. 70.

¹ See British Museum (remains).

The Corinthian Order, Greek and Roman

This order has a greater similarity to the Egyptian type of capital than either the Doric or the Ionic. It was not used to any great extent by the Greeks, but when employed it shows all the Greek skill of proportion and finish, as in the beautiful



Temple of Jupiter Olympius, Athens

little monument of Lysicrates at Athens, from which the illustration is taken (Plate III). The Romans, however, used it more extensively than the other orders, varying the capital until it finally became a mixture of the Ionic and Corinthian, when it was called the Composite Order. It will be noticed on referring to the illustration how much more graceful the Greek example is compared with the Roman, but at the same time it must be admitted that the latter is the more suitable for a large building. The Greek entablature has a dentelled cornice, and

COMPARATIVE CLASSIC ARCHITECTURE

a row of ornaments called *antefixa* at the top, a plain frieze, and an architrave with three faces. The Roman cornice is enriched with "egg and dart" carving, and modillions (carved brackets) placed along at regular intervals. The architrave has three faces like the Greek, but of unequal width, overhanging each other. The Roman capital is quite different in the character of its foliage from the Greek; the "spinosus" or sharp-pointed acanthus being employed in the Lysicrates example, and the "mollis" or blunt-pointed variety being used by the Romans. The shaft in this case is plain, but in other examples it is, as a rule, fluted in twenty-four flutes, with fillets separating them.

An illustration is given of the Corinthian Temple of Jupiter Olympius at Athens, a huge Roman building started about 170 B.C., but not finished till many years later. Many of these capitals and columns were carried off to Rome when the temple was destroyed. It had an octa-style front with twenty columns on each side, and was one of the largest temples in existence.

A drawing is given (Plate IV) of Ionic and Corinthian capitals from the Lateran Museum, Rome. The Egyptian character of the Corinthian example should be noted, with the lotus-shaped leaves placed round the bell of the capital above the acanthus.

Corinthian

Ancient Examples, Greek

The Choragic Monument of Lysicrates at Athens, 335 B.C.
The Tower of the Winds at Athens, 100 B.C.

Ancient Examples, Roman.

The Temple of Mars Ultor, 42 B.C.
The Temple of Vespasian, A.D. 94.
Third Range of the Colosseum at Rome, A.D. 70.
The Pantheon at Rome, A.D. 123 (see illust., p. 31).

COMPARATIVE CLASSIC ARCHITECTURE

The Temple of Zeus at Athens, A.D. 130 (see illust., p. 27).

The Maison Carrée, Nîmes, France, A.D. 138.

The Tuscan and Composite Orders

The Greeks never used the Tuscan or the Composite Order, which are of Roman invention. On referring to Plate III and IIIa of the orders it will readily be seen how, in some respects, the Doric and Tuscan agree, although the Tuscan is not nearly so refined in its proportion and parts as the Doric. The chief differences in the Tuscan are that it has a plain frieze, without triglyphs, and an architrave with two faces, the column is not fluted and has a base. This order is altogether inferior to the Doric and was little used. A pedestal is drawn with this order to show how it was used, but this feature was only occasionally employed.

The Composite Order, as its name implies, is a combination of the Ionic and Corinthian, the Ionic volutes being set anglewise, and the Corinthian acanthus-foliage modified to suit it. This order was generally more ornate than the Corinthian, but the carving was frequently added for display, and possessed but little architectural significance. In the example given in the Plate the frieze is "pulvinated," or rounded, but in other examples it is flat and profusely covered with ornament.

Composite

Ancient Examples

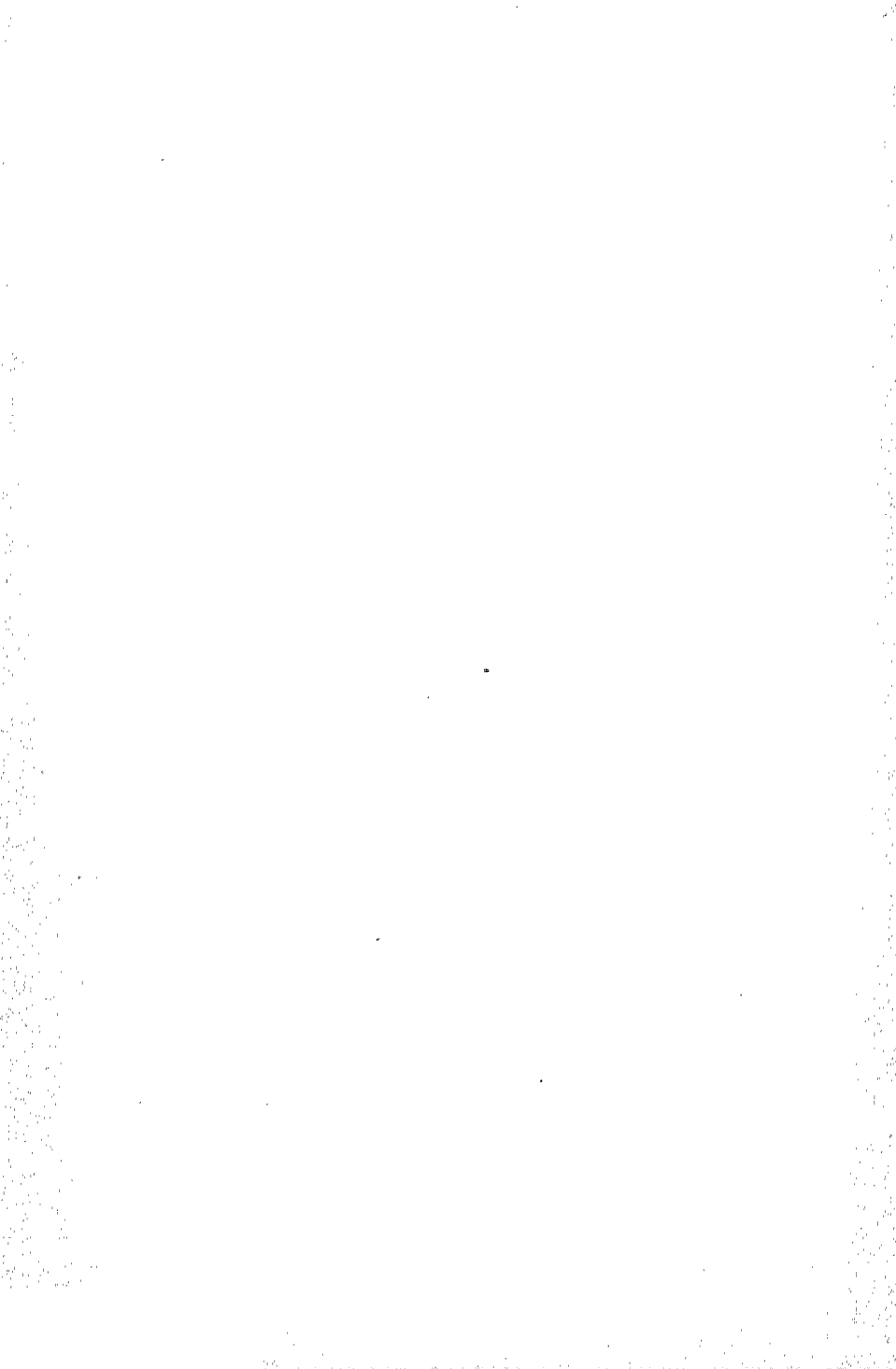
Arch of Titus, Rome, A.D. 81.

Arch of Septimius Severus, Rome, A.D. 204.

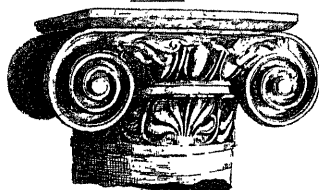
Tuscan

No ancient example; known by description only.

Modern example, St. Paul's, Covent Garden.



IONIC

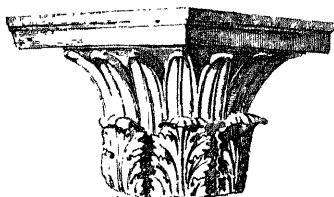


Capital from Lateran Museum
Rome

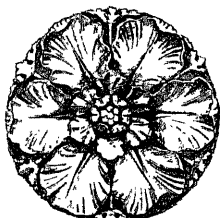


FROM PARTHENON FRIEZE.

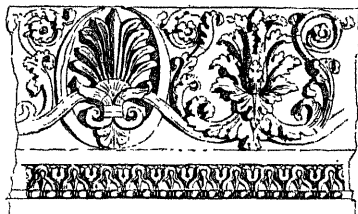
CORINTHIAN



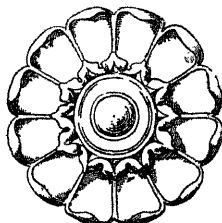
Capital from Lateran Museum



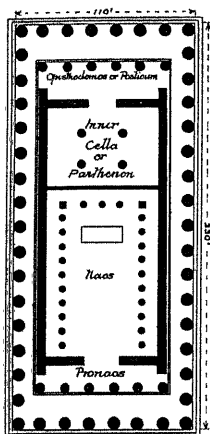
Rosette or Palmette from the
Mus. Campidoglio Rome



Roman Honeycomb and Bead ornament-Lateran Mus.



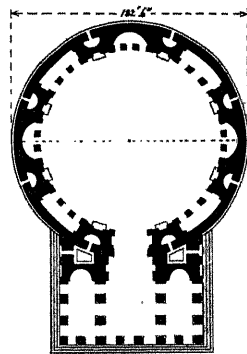
Rosette from the Erechtheion
Athens



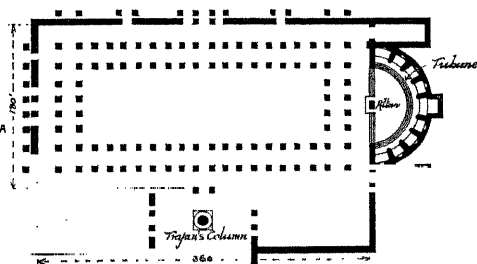
PLAN OF THE PARTHENON ATHENS.
B.C. 438

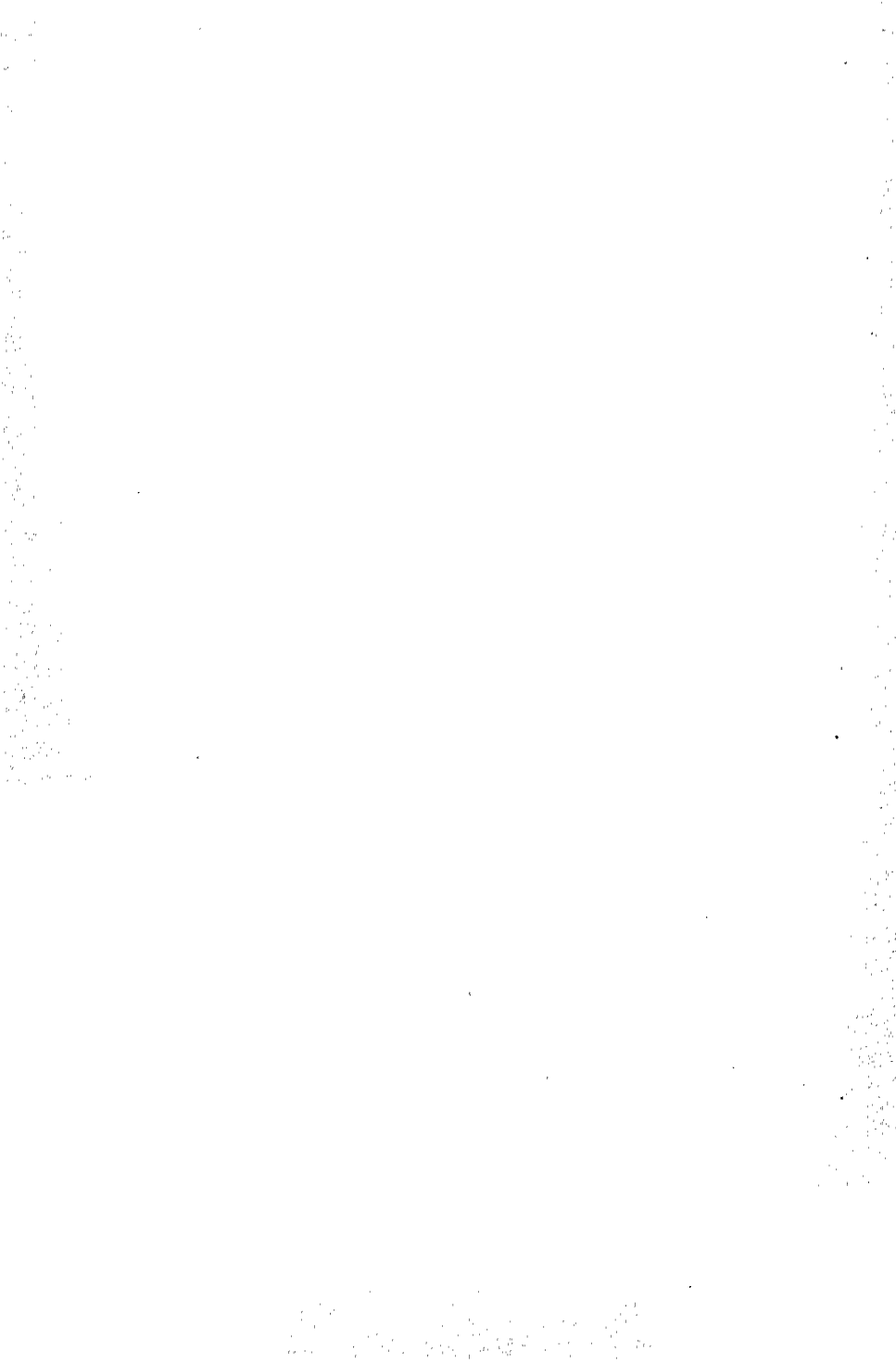


THE ULPIAN
OR
TRAJAN'S BASILICA
ROME A.D. 98.



THE PANTHEON AT ROME
A.D. 125





CHAPTER III

GREEK AND ROMAN PLANNING AND DETAILS

CHAPTER III

GREEK AND ROMAN PLANNING AND DETAILS

THERE was only at first any real similarity between the Greek and the Roman modes of building, and this was on account of the Romans employing many Greek architects on their important buildings. Very different, however, became the Roman methods during the first century A.D., when the adoption and development of the arch degraded the Greek column to the position of a mere decorative feature, or scarcely-needed buttress, and enabled the one-storied building to be heightened to two or three.

The most important change of all, as must always be the case, was thus a constructional one. The Greek was a horizontal or "Trabeated" style; but the Romans soon found this unsuited for many of their needs and adopted the arch, which they had borrowed from the Etruscans, and thus the entire methods and appearance of the buildings, with the exception of its details, were radically changed, the columns and their entablatures ceasing in many instances to be the constructive element and becoming merely ornamental additions or buttresses. With these constructional differences the plans change.

To return to the Greeks; their temple plans were as a rule rectangular, and consisted in their most perfect form of a portico front and back, a row of columns all round, and a naos

GREEK AND ROMAN

or cella within. The distribution of these columns and the number of them in the front or back are classified as follows :— *Distyle* in antis, two columns in front; *Tetrastyle*, four columns in front; *Amphiprostyle Tetrastyle*, four columns front and back; *Hexastyle*, six columns in front; *Amphiprostyle Hexastyle*, six columns front and back; *Octastyle*, eight columns in front. *Peripteral* when the columns are placed all round (see Plate IV, p. 31), *Pseudo-peripteral* when the columns are engaged to the wall, that is, only half-columns projecting (as at the Maison Carrée, Nîmes). Other shapes of Greek temple plans exist besides the pure oblong; the circular and the irregular rectangular shape such as the Erechtheion, which is really a combination of temples (see p. 31). This temple retains the main oblong form with an added portico on the north and south sides. It has, as already mentioned, a remarkable difference in its elevation, possessing the famous Caryatid portico on the south side. These Caryatides are sculptured female figures placed in the position of columns for the support of the entablature. A modern example of these figure-supports, which may give the student some idea of their arrangement, may be seen at St. Pancras Church, which is also in its plan and elevation a modified copy of the Erechtheion.

Greek Architecture is remarkable for perfect proportion and exquisite refinement in all its details, the mouldings being most excellent and pleasing in their contours, shaped on elliptical and parabolic curves. The sculpture employed in the embellishment of these buildings was of the highest order, and most worthy of notice are the wonderful masterpieces by Pheidias and his pupils carved on the frieze and pediment of the Parthenon (see pp. 22, 23). These reliefs, which can be admirably studied at the British Museum, form our models to the present day, and have never yet been approached in point of excellence. Colour was frequently employed for internal and external decoration. The Parthenon, at the time of Pericles, is

PLANNING AND DETAILS

said to have been richly decorated in this manner. The painting of internal walls and reliefs was not quite so general as with the Romans, whose love of colour and gorgeous display manifested itself in their painted and gilded apartments.

The Roman method of temple planning was with few exceptions similar to the Greek. The lintel, however, soon gave place to the arch, and the sloping wooden roof to the vault and



Caryatid Portico of the Erechtheion

dome. This change is the most important that has taken place in the history of Architecture, and the most wide-reaching in its effect, as by the introduction of the arch and the vault the constructional possibilities of building are enlarged to a remarkable degree, reaching their highest expression in the vast Gothic cathedrals at home and abroad.

The remains of Roman temples are chiefly to be found in Rome,

GREEK AND ROMAN PLANNING

but they are also to be seen in other parts of Italy (Tivoli, Pompeii), in Syria (the Temple of the Sun, Baalbec, A.D. 273, Corinthian), at Athens (the Temple of Jupiter Olympius, A.D. 117), and in France (the Temple of Diana at Nîmes, called Maison Carrée, A.D. 117).

The Pantheon at Rome, although rather late in date (Hadrian, A.D. 123), will serve our purpose as an illustration of a type of Roman temple far removed from the usual Greek form and mode of construction. It is circular in plan with an octa-style portico of the Corinthian Order, which is supposed to have been a part of a previous rectangular temple of 27 B.C. on this site. The roof is a magnificent dome constructed in brick and concrete, supported by walls of great thickness; the interior of this dome is coffered into square compartments, and the pediment roof of the portico was covered with bronze, which was removed by Urban VIII (1633) to cast into cannon. The whole building is lighted from the top by a circular opening in the dome thirty feet in diameter, the interior effect being most impressive on account of this manner of lighting.

The Romans by no means confined themselves to temple buildings, but they erected on a magnificent scale, baths, theatres, basilicas, or halls of justice, triumphal arches, and dwellings such as are found in ruins at Pompeii and Herculaneum.

To the basilica buildings reference will again be made when describing the Early Christian Architecture of England.

The interiors of the Roman buildings were as a rule decorated in a lavish manner with painting, coloured marbles, mosaic, and stone carving; the decoration was often poor in composition and lacked the refinement of execution and subject of the Greek examples. The Romans, however, if inferior as artists, may rightly be considered the greatest constructive builders the world has yet seen; for it must be remembered that they initiated a constructive *arcuated* system which in its Romanesque form was what the Gothic architects developed and perfected.

CHAPTER IV

EARLY CHRISTIAN ARCHITECTURE THE ROMAN AND BYZANTINE

CHAPTER IV

EARLY CHRISTIAN ARCHITECTURE

EARLY Christian Architecture is generally considered to have originated in Rome, some authorities consider in Egypt or Syria; it was, however, from Rome, when officially recognized, that the Christian faith and building spread its influence throughout Italy (as at Ravenna), and to Byzantium (Constantinople), where the Roman capital was moved in A.D. 324.

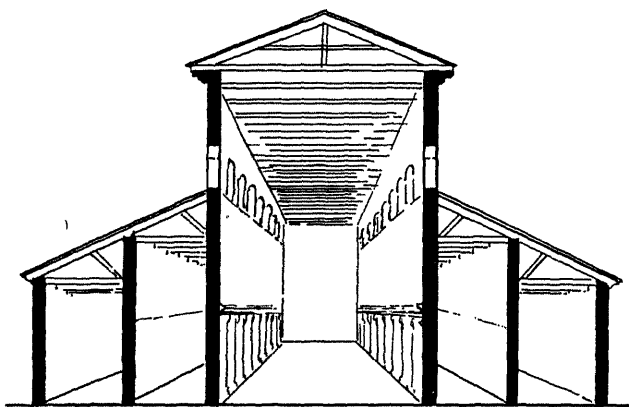
The time from the Early Christian basilica at Rome to our first Gothic cathedral covers a period of about 800 years. The development of style was very great, but nearly all the essential features were preserved throughout this long period. On referring to the illustrations on p. 31, the similarity of plan in the early basilica and in the Gothic church will be readily noticed. We have already nave and aisle arcades, an apse, and an altar in front with ample room for the addition of a choir. The basilicas in pagan times were the halls of justice and commercial exchanges of the city. In construction they were more lightly built than the Roman temples or baths, etc., the walls were thinner, and the roof of the basilica was usually of wood, the covering of the nave being considerably higher than the lean-to roof of the aisles, permitting the clerestory windows so usual in our Gothic churches.

It was not until the time of Constantine that vaults were used in the construction, or reconstruction, of these basilicas,

EARLY CHRISTIAN ARCHITECTURE

and even then the trabeate system was frequently adhered to. At this time a great impetus was given to the building and adapting of basilicas for Christian worship, and many of the pagan temples and other buildings were despoiled, and columns, etc. appropriated for this purpose. Only ruins exist at the present time of these pagan basilicas.

In some early basilicas, such as old St. Peter's, Rome, A.D. 330 (pulled down to make room for the present Renaissance building), there existed the transverse portion or bema, corresponding



Section of Early Christian Basilica

to the Gothic transept; so it will be noticed that the Latin cross plan so customary in mediæval times, and at the present day, is but a development of, and not a departure from the basilica plan.

The interiors of these Early Italian Christian buildings have also, apart from their plans, marked features which are similar to our Gothic style. The supports, for instance, consisting of an arcade composed of single columns with handsome capitals from which the semicircular arches spring, correspond in arrangement to the Gothic piers and pointed arches. Also

ROMAN AND BYZANTINE ARCHITECTURE

the horizontal line of mouldings, in detail the same as the classic cornice, becomes the Gothic string-course, with in some cases openings above forming a gallery in the position of the triforium usual in our large churches.

The roofs of the basilican edifices were of timber construction over the main parts of the building where the span was greatest. They were of moderate pitch, and as a rule ceiled, and the side aisles, being of smaller span, were sometimes vaulted with simple semicircular vaults, and the apse with a semi-dome.

We now notice the use of the arch constructionally; the vault of barrel form follows as a natural sequence; and so the first steps in the long progress from the Roman to the multi-ribbed Gothic vault are taken (see chapter on Vaults, p. 123).

The next step in the development of Early Christian building took place in the East, and was due, as previously mentioned, to the transference of the seat of government from Rome to Byzantium, in the time of Constantine, A.D. 324.

The term "Byzantine" as applied to Architecture is used frequently in too sweeping a manner, so as to include much that is distinctly Romanesque and Western in character. The plan of a true Byzantine building is clearly defined, showing a great contrast to the long rectangular shape of the Romanesque churches of Western Europe.

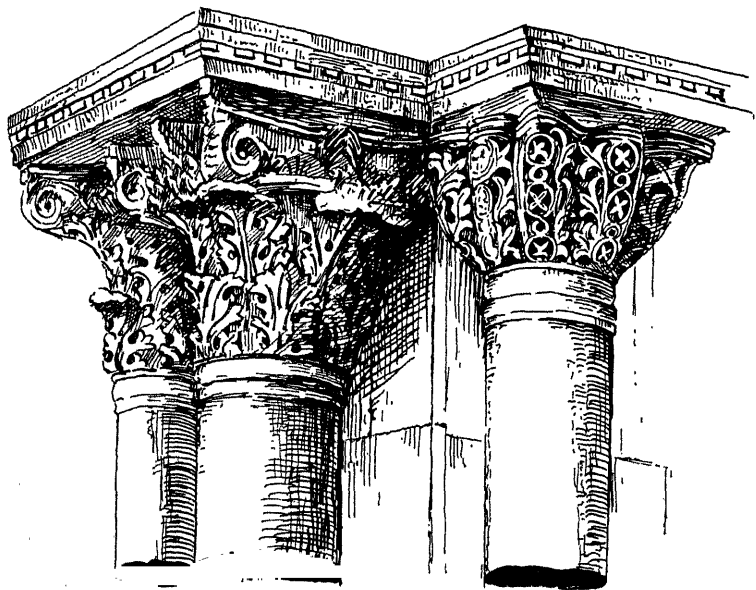
The Byzantine style manifested itself in Italy, as at Ravenna (San Vitale) and Venice (St. Mark's), and even in the south of France, as at Périgueux; but it only occurs sporadically and on account of special influences.

The culminating effort of Byzantine Architecture is to be found in its natural home at Constantinople, in the magnificent Church of St. Sophia (now a mosque), built by the order of Justinian, A.D. 532. In this building the predominating feature of the Byzantine style, the dome, was carried to its highest pitch of perfection.

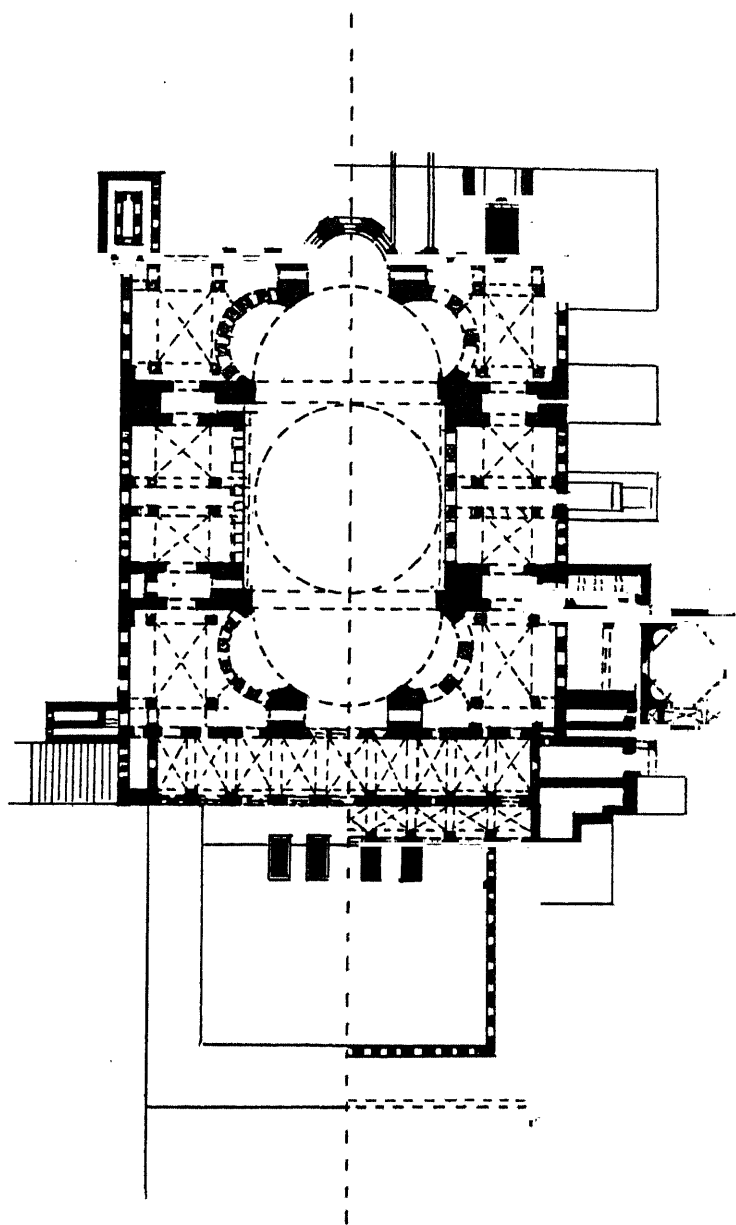
EARLY CHRISTIAN ARCHITECTURE

The constructive skill displayed in a large Byzantine building, such as St. Sophia, and the harmony of design produced by the proportional arrangements of the various parts, make these structures worthy to rank with those great buildings of the Greeks and Romans which have been already considered.

The exterior elevation of St. Sophia is of small importance



compared to the impressiveness of the interior, which on the first visit overwhelms the spectator; the body of the church being unobstructed by piers and covered by semi-domes leading up to the magnificent central dome, produces a most marvellous effect, artistically perfect and constructionally sound (see plan). The disposition of the flattened domes regularly grouped at various levels produces an effect of grandeur on the outside and displays in the highest degree great powers of con-



Plan of St. Sophia, Constantinople

EARLY CHRISTIAN ARCHITECTURE

struction. The body of such buildings as St. Sophia were as a rule built of brick, cased with marble of various colours and dressed stone, and the domes decorated on the inside with brilliant mosaics, gold predominating. This great dome at St. Sophia is 107 feet in diameter, lighted by a series of forty small windows arranged immediately above the cornice which caps the pendentives.

The magnificent interior shows all the lavish display and love of colour so characteristic of the Orient; mosaics are even more generally employed than with the Romans, and coloured marble columns and linings to the walls add considerably to the brilliant effect.

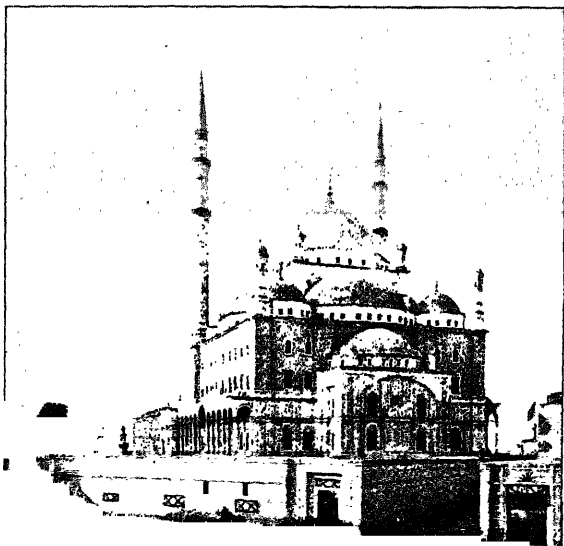
The essential difference between Byzantine and Roman domes consists in the fact that the former are carried over a square space, the latter (*e. g.* the Pantheon) over a circular one. This junction with the square is effected by means of "pendentives" at the angles, which are really portions of a larger dome on which the complete dome rests.

A modern effort in the Byzantine style can be studied in part in the new Roman Catholic Cathedral at Westminster, designed by the late Mr. J. F. Bentley, but its cramped position considerably detracts from its external appearance. The mosque at Cairo is another good example of modern Byzantine, in imitation of St. Sophia (see p. 47). In Russia and Greece at the present time the Byzantine style is in general use for church building. It has already been pointed out that the Byzantine style planted itself in parts of Italy, and undoubtedly influenced their architecture for a time. But generally throughout the Western Empire, and especially in France, Germany, and England, the old Roman basilica form was employed, and modifications from time to time were adopted, until in plan the fully-developed cross, with either apsidal or flat east end, became the recognized type for church building.

The Romanesque style, so called because it was based on the

ROMAN AND BYZANTINE ARCHITECTURE

traditions of the Early Christian builders in Rome, is an arcuated style differing much from the Eastern Byzantine in the matter of general plan and aspect; although it must be remembered that they are the same style from the same origin only in two phases. The Byzantine shows a preference for the dome, and the Romanesque for the wooden and, after the middle of the tenth century, for the simple vaulted roof.



A Mosque at Cairo

There are of course varieties of Romanesque showing local character, the French differing from the German and English (our Norman style), and the Northern Italian, Lombardy, following more closely the German than that of the Tuscan cities, such as Florence, Pisa, Lucca, Pistoja. In Italy, especially in the central provinces, some of the Romanesque churches bear traces of the handiwork of Byzantine artists, and even where the

EARLY CHRISTIAN ARCHITECTURE

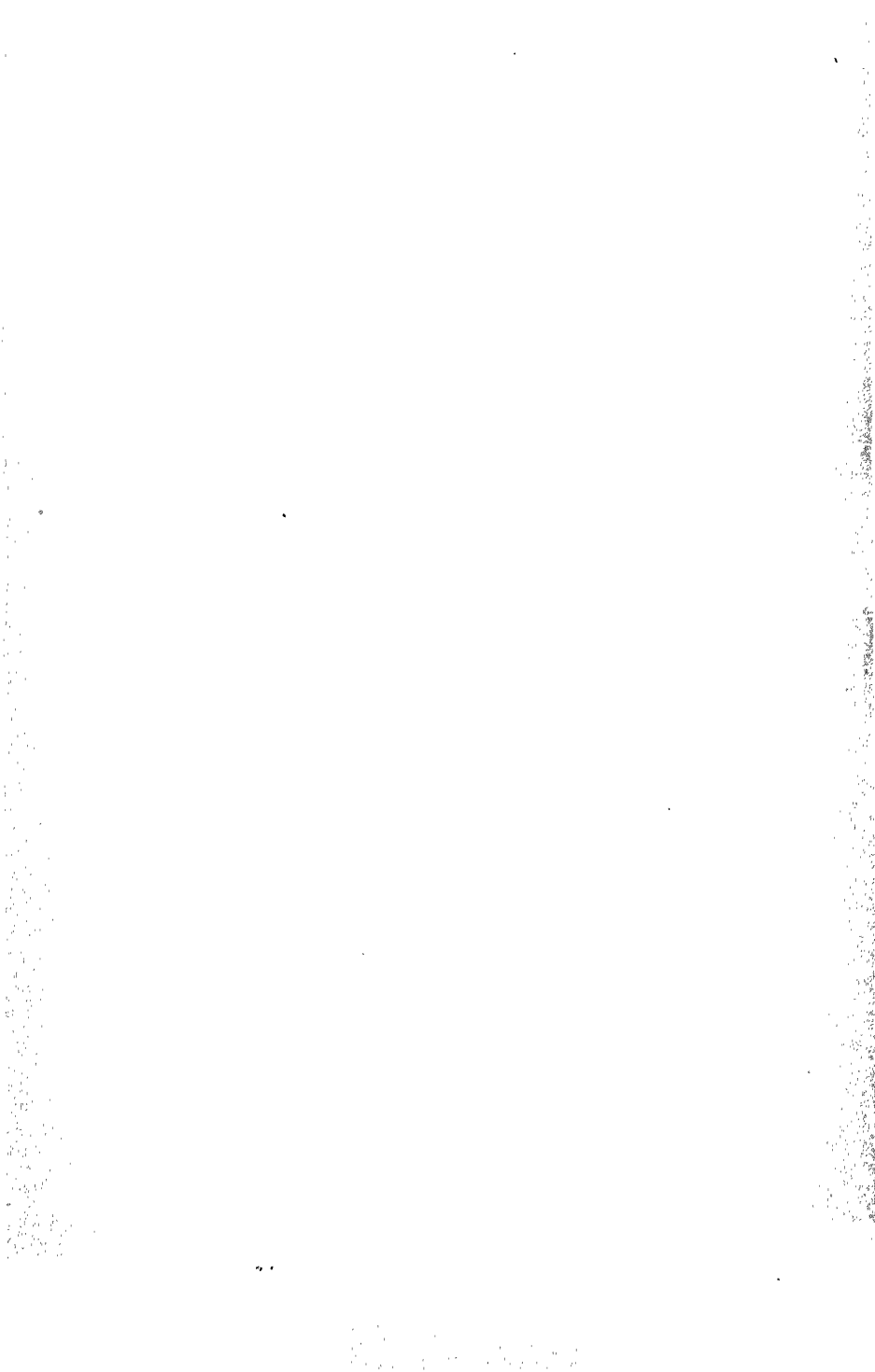
plan is that of the true basilica, the decoration is Byzantine in character. In Northern Italy the majority of the buildings are more distinctively Romanesque, vaulting becomes the common practice, while the details of the stone carvings of floral and animal forms begin to display a Gothic tendency.

In France during the eleventh century a great advance was made in the Romanesque style, and in Normandy more particularly a type was evolved which fifty years later became our Anglo-Norman style. The best-known churches in Normandy of this period are at Caen, St. Étienne, 1066, and La Trinité, 1083. The great difficulty with the Romanesque builders was how to support the lateral thrusts of their massive vaults, and at the same time admit light through clerestory windows. At St. Étienne this is accomplished by a series of flying buttresses spanning the aisles. Vaulting is now carried out over spaces other than square,¹ and thus a beginning was made which eventually led to the important change from the semicircular to the pointed arch.

¹ See chapter on Vaults, p. 123.

CHAPTER V

CHRISTIAN ARCHITECTURE OF ENGLAND BEFORE THE NORMAN CONQUEST



CHAPTER V

CHRISTIAN ARCHITECTURE OF ENGLAND BEFORE THE NORMAN CONQUEST

DURING the Roman occupation of Britain from 55 B.C. to A.D. 420 important works and buildings were carried out, highways were planned with excellent roads, and baths and castles erected. Many remains of these Roman classic buildings exist, as at Bath, Colchester, York, and Lincoln, and the ruins of what appears to be a basilica church have been recently discovered at Silchester.

The two centuries succeeding the Roman withdrawal may be regarded as a blank so far as architecture in this country is concerned. On the arrival, however, of St. Augustine in England, A.D. 596, zeal was aroused through his religious teaching, and church building was commenced in what we call the Anglo-Saxon style, an imperfect and unskilful imitation of the Roman.

At Canterbury St. Augustine founded the Cathedral erected over the ruins of a Roman structure. The plan of this early church was on the Roman model with an extensive crypt; it was subsequently destroyed by fire, and the present Cathedral was built on the same spot.

This Anglo-Saxon, or pre-Norman, mode of building shows a decided falling-off from the Roman basilica structures, but it is most interesting, as many original details are manifested

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which distinctly lead us a step further away from the classic, and nearer to the Gothic style.

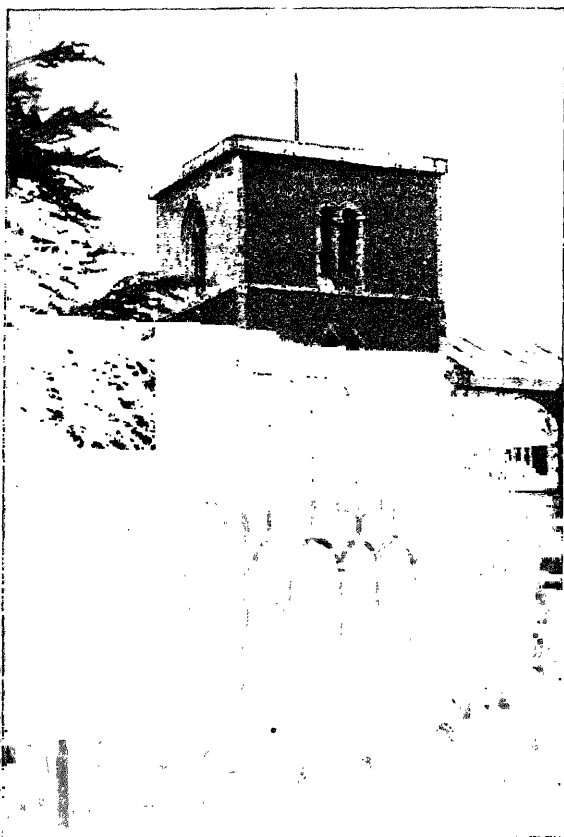
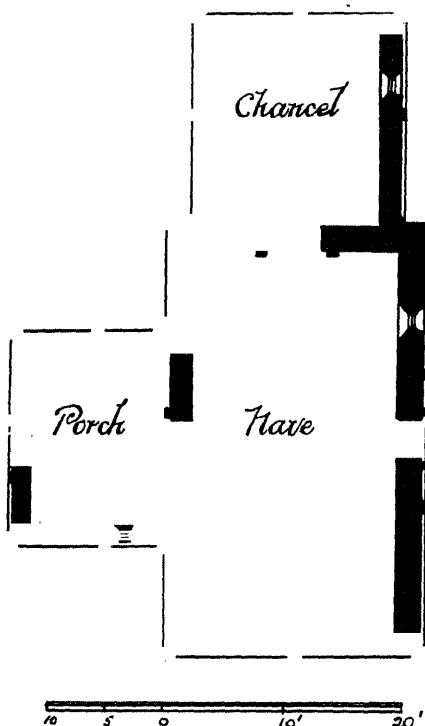


PLATE V.—SAXON CHURCH: BARTON-ON-HUMBER

The Anglo-Saxon churches were invariably small, and we find the basilica plan adopted in some cases, as at Brixworth, Northamptonshire, and St. Martin's, Canterbury; the Latin

BEFORE THE NORMAN CONQUEST

cross in other cases, such as Castle Hill Church, Dover, and Worth, Sussex. An illustration is here given of the plan of the excellent little Saxon church at Bradford-on-Avon, Wilts. It is of the most simple type with a porch. The church is too



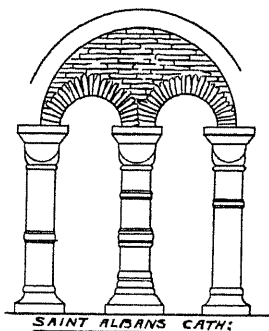
small to be now used for service, but it is well cared for and preserved as a perfect relic of this period.

The early form of domestic building was the stone hut, composed of large stones partially dressed and laid in horizontal layers together without mortar, the intervals being filled in with small pebbles. The roof was formed by a

CHRISTIAN ARCHITECTURE

gradual approach of the larger stones in a dome shape, until a single stone closed in the summit, one or two openings being left towards the top to form a chimney. This arrangement is curious, for although the arch was well known to these builders it was not generally employed.

None, however, of these early domestic huts exist in England, but they are to be found in Ireland and Scotland. The Saxon ecclesiastical building was a great advance on this barbaric style. At first the churches were constructed of timber, but of these timber erections we have no complete remains.

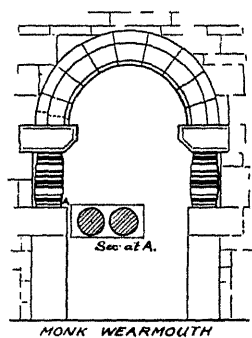
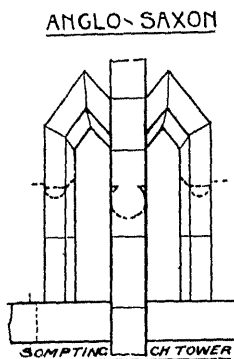


Stone and bricks were subsequently employed, the bricks used being frequently of the flat tile-shaped Roman form, taken, as a rule, from any Roman ruin in the immediate neighbourhood.

The leading external features of an Anglo-Saxon church are small semicircular arched openings placed high up from the ground near the eaves of the roof, and splayed inwards. They are at times triangular-headed, as at Sompting, Sussex, and Dewhurst, Gloucestershire, but this shape is rare. These windows are either single or double, the double ones being divided by a baluster-shaped pillar. Such balusters are a

BEFORE THE NORMAN CONQUEST

peculiar feature of this style and should be carefully noted; they are usually situated in the openings which are the highest up, as in the uppermost storey of the tower, where they are unglazed. A large amount of blank wall space is the natural result of these small openings, but this is in a measure relieved by bands of dressed stone running vertically up the building and bonded at intervals with horizontal courses (as at Worth, Sussex). This type of work is called "long and short work," and is most characteristic of the period; it is more frequently found on the towers than the side walls of the church

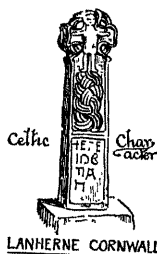


(see p. 52, Barton-on-Humber). Buttresses, to resist the thrust of the internal arches, were not employed in Anglo-Saxon churches, and any pressure exerted by the roof was met by extra thickness in the walls. Square towers were very generally adopted, and when decorated with the "long and short work" just mentioned present a pleasing appearance for this rude style of architecture. These towers were frequently crowned with a squat wooden spire. Earls Barton and Barnack, Northants, and Barton-on-Humber all have towers of this character.

The doorways, as the windows, were semicircular, as at Monkwearmouth, or triangular-headed, but they are sometimes found

ARCHITECTURE BEFORE NORMAN CONQUEST

square with a single lintel stone carrying the wall above; they are narrow and have an impost moulding sometimes rudely carved. The mouldings are very simple, fillets, chamfers, hollows, and rounds being the most usual forms adopted. When carvings are found they are poor and rough in execution,



carved with the axe and not the chisel. Specimens of such carvings are to be seen at Sompting, and Earls Barton, Northamptonshire. The best work, however, of this kind is met with in the numerous ruined crosses on which is found a figure of Christ over a curious interlaced cable pattern of Celtic character. Fragments of such crosses are found at times worked into Norman walling as

ordinary building material. Notable examples of Anglo-Saxon work are to be found at Worth, Sussex; Brixworth, Northants; Bradford, Wilts; Monkwearmouth; in Repton Church crypt, and Ripon Cathedral crypt.

CHAPTER VI
ENGLISH ROMANESQUE
1066—1189

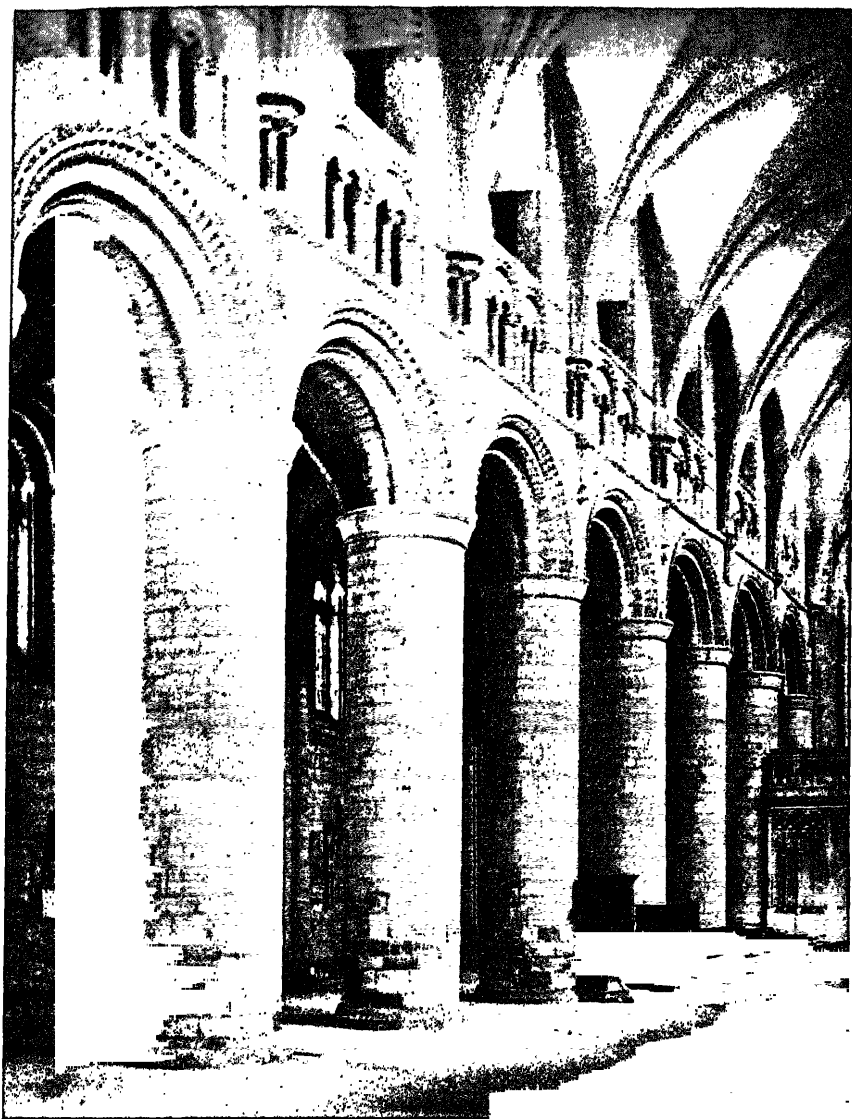


PLATE VI.—NORMAN NAVE: GLOUCESTER CATHEDRAL

CHAPTER VI

ENGLISH ROMANESQUE

1066—1189

IN Anglo-Norman Architecture we are freed in a great measure from Eastern taste and traditions, the Western feeling predominating. This form of Romanesque, introduced into England by Edward the Confessor, made rapid strides after the Conquest, entirely supplanting the wholly inadequate Saxon style.

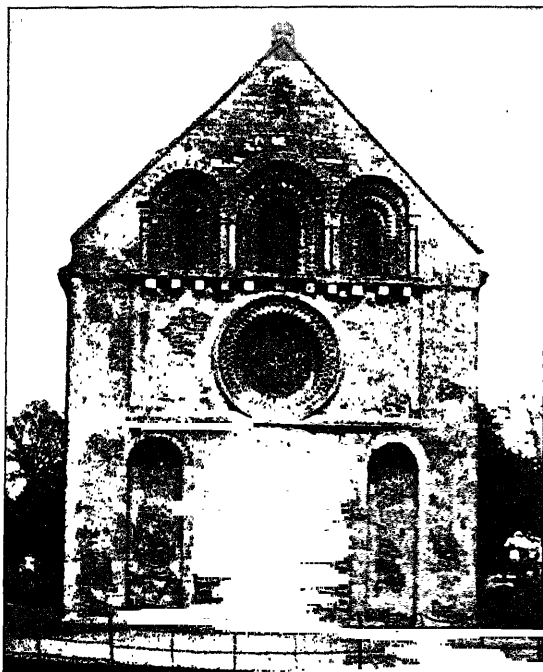
It must be carefully noted that it was an imported style from France, that country being ahead of us some fifty years. Although as a rule the architectural student is directed to the abbey churches at Caen, it must be remembered that there are others less known, which are of earlier date, such as the abbey churches at Jumiéges and Bernay.

During the reign of William I the Church of St. Étienne (St. Stephen) and the choir at Canterbury Cathedral were building at the same time; so it would appear that neither church could have borrowed much from the other. There was indeed but little need, for with the Conqueror came the monks, the skilled architects of the time, who had naturally shared the same knowledge and had come under the same influences.

But new local surroundings and contact with a strange people, worked, as they always must, important changes, and Norman Architecture in England soon developed a character of its own distinct from the parent style, which it outlived by nearly fifty

ENGLISH ROMANESQUE

years, as will be seen later on. Unlike the Anglo-Saxon style, which has little relation to the other branches of the Romanesque tree, the Anglo-Norman is essentially Roman in its main



Ifley, West Front

characteristics. While the former seems merely a rude rendering of earlier Italian forms with some local colouring, the latter is most clearly related to all the other branches.

Very attractive to the student of Architecture are the various Romanesque styles, differing as they do throughout Western

Europe through local and climatic conditions; the Italian Romanesque with its marble columns and definite classic details (which may again be divided into the Lombard and Tuscan) differing remarkably from the French with its "chevet," east end, and freer carvings of animal and floral forms; the German or Rhenish again being allied closely to the Lombardic, although varying considerably from the Tuscan, the exterior form being marked by octagonal turrets above the roof-line, apsidal termination to the choir, and arcaded wall surfaces. The loosening of the bands of the classic traditions can now be readily followed, until all the Roman details are lost, and the style merges, at the end of the twelfth century, almost insensibly into the pure Gothic.

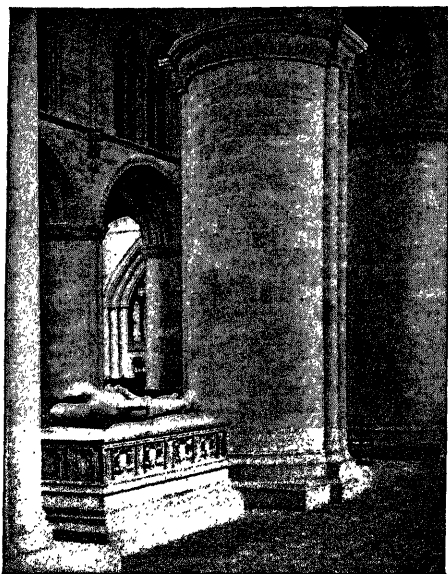
The Anglo-Norman style existed from the beginning of the reign of William I (1066) till Henry II (1189); and during this period an immense amount of building was accomplished.

The semicircular arcuated system is throughout this style carried to what perfection it was capable of, and the arch with its supports are moulded into an artistic whole, free from the incongruities at times noticeable in the Roman system, a system which never quite relieved the arch from the presence of the opposite trabeate Greek mode of column and entablature.

The general appearance of an Early Norman building is one of great massiveness and strength, somewhat plain, and possessing at first no great elaboration of details. The plan is a Latin cross, the transepts or arms having considerable projection from the nave, and the east end is as a rule rectangular (see p. 134). Many castles were constructed throughout England at this time, and the necessity of defence from foreign or local enemies made these buildings almost purely utilitarian in form and construction. Most of our cathedrals were planned and started during the eleventh and twelfth centuries, and many of them still retain a considerable portion of pure Norman work, such as Durham, Gloucester, Peterborough, Ely, and Hereford. Apart

ENGLISH ROMANESQUE

from cathedrals, however, very numerous indeed are the churches in which excellent Norman work may be found. The beautiful little church at Iffley, Oxon, is a most complete specimen of this style at its late ornate period (see p. 62). In the later work the plainness of the style in a great measure disappears; although nothing of the strength is sacrificed, much attention is given to



Hereford Cathedral, Nave Arcade

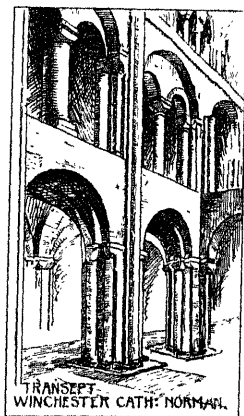
details, and the execution of the carvings is much improved by the general use of the chisel. The character of their carving is most distinct (see p. 87), and is not in the least likely to be confused with that of either the Saxon or Early English styles. The openings of both doorways and windows were at first narrow and semicircular, with bold mouldings of large rounds and hollows deeply set (see pp. 68, 87). As the style

advances the windows are grouped in threes, and even in doorways there was at times adopted a blank arch on each side of the centre opening. A few circular disc and wheel windows are found, as at Iffley (see p. 62) and Christ Church Cathedral, Oxford.

The interior of an important Norman church impresses the spectator with the idea of great strength, the piers being comparatively short and very massive, composed at times of single columns of great thickness, and at others grouped into a solid mass of masonry. The arches supported by these piers are bold semicircular ones, frequently quite plain with flat soffits as at Winchester, but at Durham they are richly decorated with mouldings and the chevron ornament. In spite of this solid manner of building the general appearance is not one of excessive heaviness, as the proportions are so thoroughly balanced, that when the Norman work is complete from floor to clerestory a nave in this style presents a splendid effect (see Plate VI).

The triforium varies in design from the large single semicircular arch as at Southwell Minster, to the group of two (as at Winchester and Wimborne, see p. 66) or three smaller arches occupying one compartment of the nave; and the clerestory often repeated this triple arrangement, with the centre arch carried higher, as at Durham.

The roofs are constructed of either stone or wood, the stone ones being at first of simple barrel vault form without ribs, as in St. John's Chapel, Tower of London. Groined vaults with ribs on the groins were introduced later in the style, but the spaces vaulted over as a rule remained squares (see chapter on Vaults). When other spaces, oblong in plan,



ENGLISH ROMANESQUE

required vaulting, the pointed arch became a necessity, and this pointed arch was introduced during the transition from Norman to the Early English style.

The wooden roofs are of the ordinary King Post type, but hardly any of these are left; many were destroyed by fire, but most of them were removed to make way for the glorious



Triforium, Wimborne, Dorset

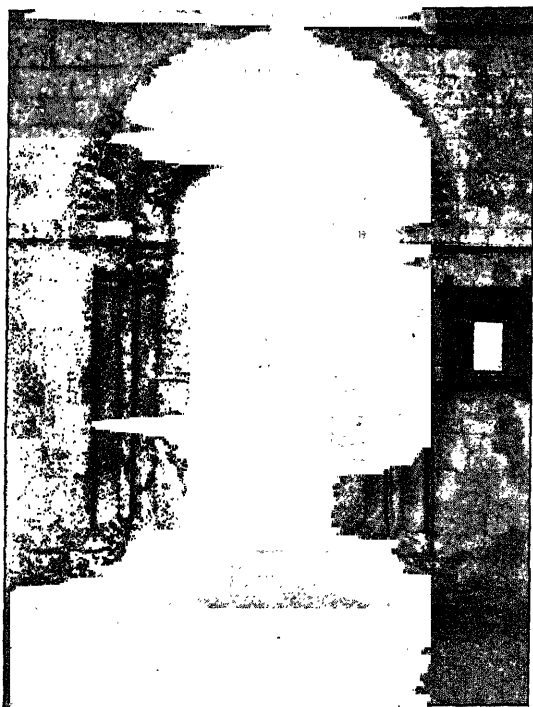
Gothic vaults. At Peterborough a wooden roof with a flat boarded decorated ceiling (restored) can be seen.

The Anglo-Norman ornaments are most interesting and instructive, and here can be more readily traced the feelings and ideas of the artist employed, which lends so much charm to all our mediæval sculpture.

The early carved capitals betray their classic origin, small Ionic volutes being found upon them. A scollop-shaped capital

is also frequently found, as at Wade, Thanet, and Cliffe, Kent. But the traces of classic detail are soon lost, and even the French feeling alters, and the carved detail becomes essentially English in character (Plate X, p. 87).

The chevron or zig-zag carved moulding replaces the classic

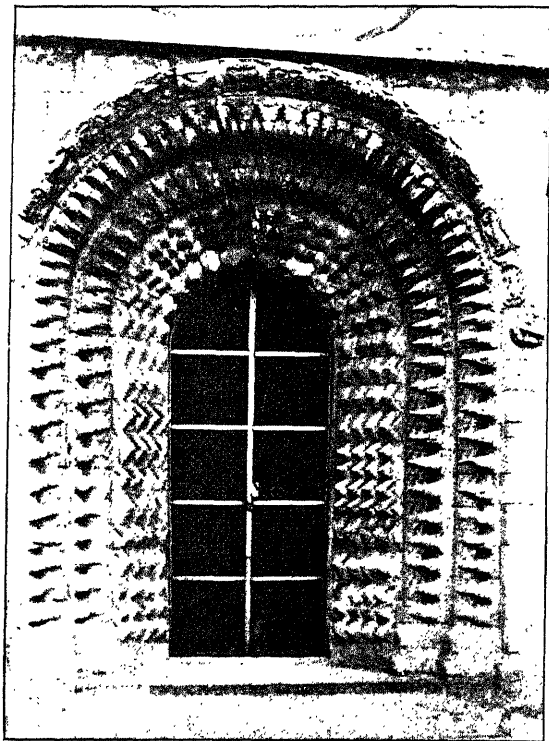


Iffley Church Doorway

fret, and is found chiefly round doorways and windows, also in similar positions the grotesque beak-head carving is seen. All these examples are illustrated together in Plate X for comparison with later Gothic ornament. In some cases the

ENGLISH ROMANESQUE

heads of the doorways were filled in solid to the spring of the arch, and on this portion carvings of religious and mythical incidents were crudely depicted. Two specimens of very early Norman figure-carving are given in the drawings from Kilpeck



Iffley West Doorway

and Westminster. Glazing now became usual in all the window openings, but stained glass was not introduced with any pictorial effect until the end of the style. Fine-coloured glass found in Norman windows belongs to the thirteenth century or later.



Doorway, Romsey Abbey, Hants

KILPECK HEREFORDSHIRE
c. 1070

Late Norman, after about 1130, is characterized by a greater profusion of stone carving; most of it is worked with the chisel and displays much finer execution; not confined to capitals and arches alone. Decorated wall arcades and even diaper patterns on the wall spaces are found, but such details always denote late work.

It must be remembered that the pointed arch

CHAPTER HOUSE WESTMINSTER
c. 1070

ENGLISH ROMANESQUE

is frequently found in Norman buildings, but it is usually a mark of late work, although not always Transitional, as it is largely a matter of how, or in what position, it is employed. In Malmesbury Abbey (1115) the pointed arch is found perfectly plain, with a flat soffit supported by purely cylindrical Norman piers, and in the ruined Abbey at Glastonbury (1180) the same

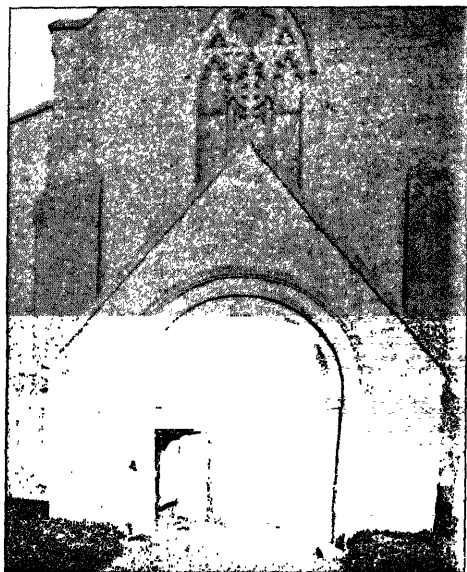


Arcade, Glastonbury

arrangement is shown, but in a more elaborate and decorated form, approaching as it does in date nearer to the Transitional period. It is this fact that justifies the Norman style being considered as a part of Gothic architecture as so many authorities do; but until the pointed arch becomes the predominating feature it is not pure Gothic.

Most important castles and city defence walls were built

during the Norman period; in many instances the entire city was surrounded by a wall of great strength, which usually had four principal gates, as at York and Chester. In London a wall of this character also existed, and portions of it are still to be seen, but it was probably in the main of a much earlier date than Norman. The four principal gates were, on the north the



Cuddesdon, Oxon.

Norman gate of Bishopsgate, on the south the gate on London Bridge (1175, first stone bridge), on the east Aldgate (pulled down 1606), on the west Ludgate, or Fleet Gate (rebuilt 1215, and subsequently destroyed). There were others in addition to these, such as Newgate, Cripplegate, and Aldersgate, their names, which are at present in use, indicating their positions in the city.

The most important castle remains of this period are Rochester and Tonbridge in Kent, Heddingham in Essex, Conisburgh and Richmond in Yorkshire, Guildford in Surrey, and Dover; these should be visited, as a description here is impossible.

The crypt at Canterbury, the naves of Rochester, Peterborough, Durham, Gloucester, Ely, and St. Bartholomew, Smithfield, are important monuments of the Norman style.

CHAPTER VII

EARLY ENGLISH OR THE FIRST-POINTED STYLE

1189—1307

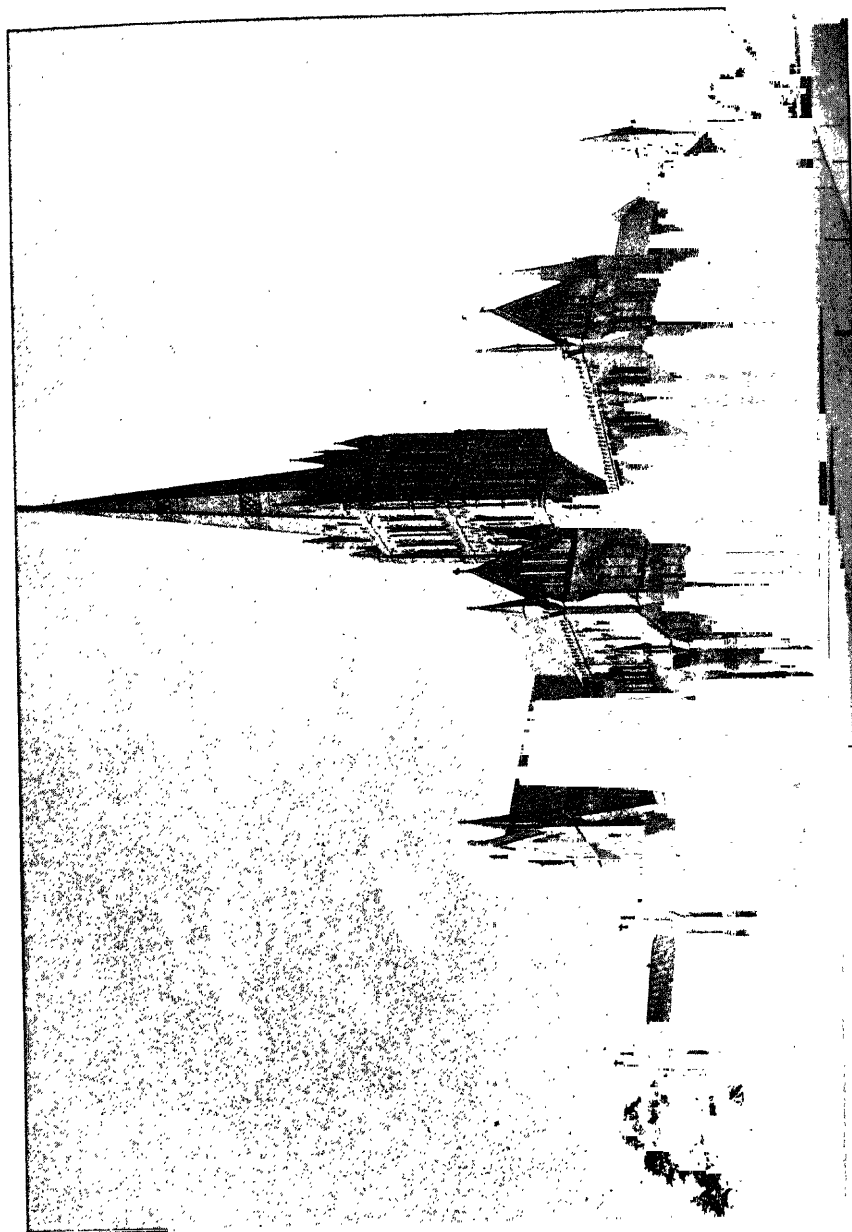


PLATE VII.—SALISBURY CATHEDRAL

CHAPTER VII

EARLY ENGLISH OR THE FIRST-POINTED STYLE

1189—1307

THE nomenclature for the styles of Gothic architecture is misleading and ill adapted to explain the different methods of building at stated times. Such terms, however, as "Early English," "Decorated," and "Perpendicular" have been accepted and used by most authorities for a number of years, so that it will be advisable, and less confusing, to be guided by them.

In passing, however, it must be noted that Anglo-Norman is frequently treated with and as a part of Gothic proper, and this is not unreasonable as one style merged very gradually into the other, and the pointed arch, the typical form of true Gothic, is found in both. Therefore no precise date can be fixed when the round arch was displaced by the Gothic form.

It is convenient, however, to separate them by beginning a new chapter here, and we shall start our consideration of Gothic architecture with the reign of Richard I, 1189, remembering that the Transition period between the two styles, Norman and Early English, existed for about ten years on each side of this date.

Gothic architecture could not have existed, or have attained such magnificence, unless it had been the outcome of the religious fervour and zeal of the people, supported in addition by the munificence of kings, bishops, and nobles. The same spirit

EARLY ENGLISH ARCHITECTURE

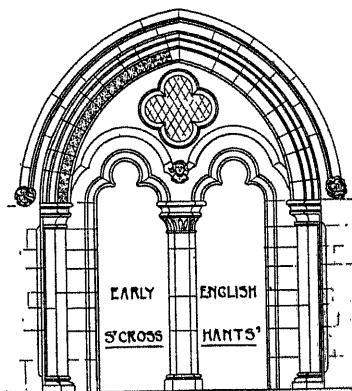
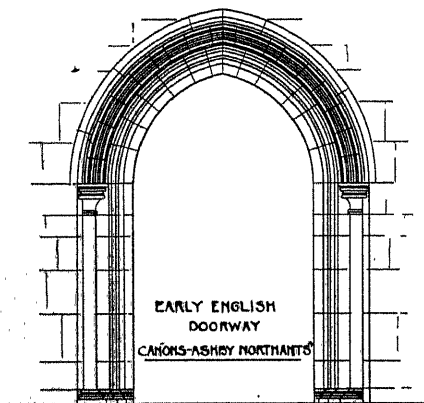
of course prevailed in Norman times, as the majority of our cathedrals were founded or rebuilt during this period, the Early English architects adding to some (as at Lincoln and Wells, 1215), and remodelling others.

This Gothic style, in direct opposition to the Greek horizontal manner of building, is based on a vertical principle of construction, the whole exhibiting in a most marked degree an upward tendency. Long vertical lines are found in the piers on the inside culminating in the vault; and the vertical buttresses on the exterior, breaking through string courses and parapets, with the crossing of nave and transept crowned by tower and spire, enhance this vertical character.



LINCOLN CATH. CHOIR

The Early English openings are now almost universally constructed with the pointed arch; and the larger doorways in this style are frequently double (see below), being divided in the centre by a column or group



of shafts with a curved or bell-shaped capital. The mouldings round the arch are numerous, consisting of deep hollows and



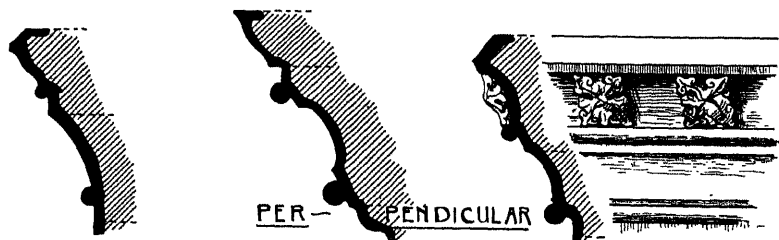
NORMAN MOULDINGS



EARLY ENGLISH



DECORATED



PERPENDICULAR

PLATE VIII.—COMPARATIVE GOTHIC MOULDINGS

rounds (Plate VIII, p. 79), a great contrast to the Norman forms; they are as a rule cut on the square block, and the rounds at the angles of this block outline are usually filleted. Another beautiful double doorway at Christ Church, Hants, is illustrated below; it is deeply recessed and possesses a great wealth of arch moulding, supported by columns with graceful capitals and Purbeck marble shafts.



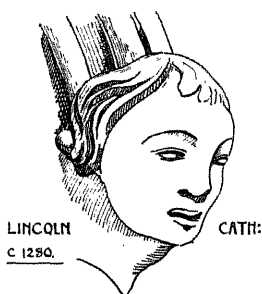
Christ Church, Hants

The windows present the greatest contrast to the Norman ones. The early examples are always long narrow openings with lancet-shaped heads; they are used single or in groups up to seven. When they are used in pairs a quatrefoil is often placed between them at the top and the whole window-head, enclosed with a dripstone moulding, as at Charlton, Oxfordshire (see Plate XI, p. 95). It was this arrangement that started Gothic

EARLY ENGLISH ARCHITECTURE

tracery, which will be described in detail later on. Specimens are given in Plate IX of some Early English and Decorated arcades, sedilia, etc., which show clearly the various shapes of the arches, and the decoration of these periods. The ornaments of the thirteenth century were very beautiful and characteristic, and much better worked than the carvings of the Norman period. Two most important types of ornamental detail should be noticed as they are quite peculiar to this style; the one is the "Tooth-Ornament," and the other the "Stiff-leaf Foliage" (see Plate X) so frequent in capitals, spandrels, and string courses.

The wall spaces above the arches were at times (Westminster Choir and Chapter House, Plate IX) completely filled with



carved ornament of various leaf patterns fitting together in small square spaces, this decoration is called "diaper work." The execution of this, as of all Early English carving, is extremely good, and has a rich and pleasing effect, the deepness of the carving and moulding being characteristic.

The figure sculpture also made a great advance upon the grotesque Norman examples, and some of the finest work of this period is to be found in the famous "Angel Choir" of Lincoln Cathedral; these figures are most graceful and natural, suitably composed for the positions they are required to occupy. The west front of Wells Cathedral has excellent examples of Early English figure sculptures architecturally composed.

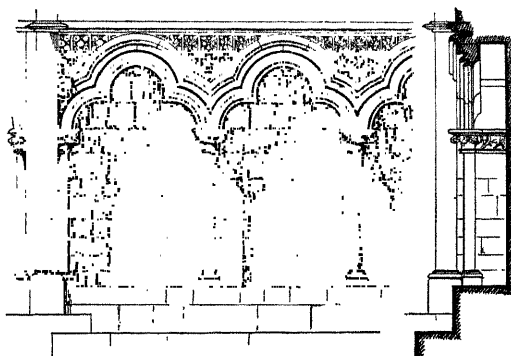


LAUNCESTON CORNWALL

The mouldings, as already mentioned, are frequently cut on the rectangular block form (see Plate VIII, p. 79). They are deeply undercut, consisting of hollows and rounds with fillets shaped upon them. The

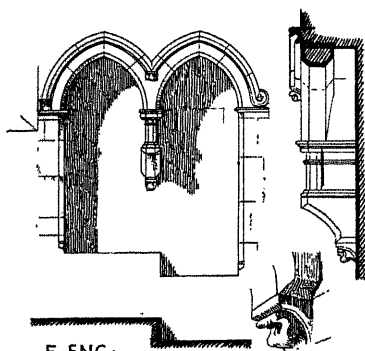


PISCINA · BARNSTON · ESSEX ·
EARLY ENG.^M

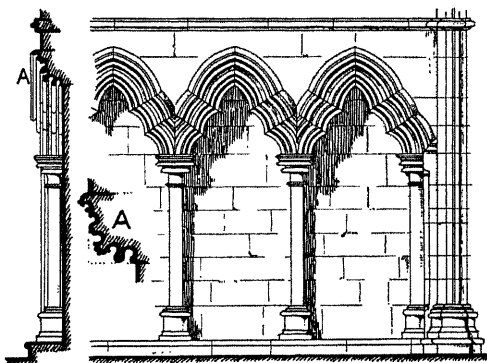


WESTMINSTER ABBEY
SEDILIA · CHAPTER-HO.:
c.1260

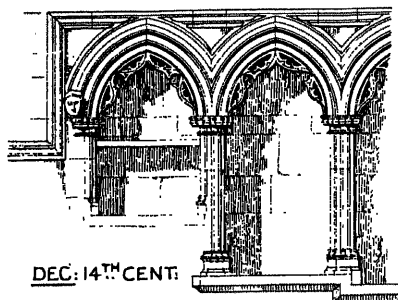
SECTION



E. ENG.:
SEDILIA FAIRSTEAD · ESSEX ·



WALL-ARCADE · CARLISLE CATH.: c.1300
DECORATED.



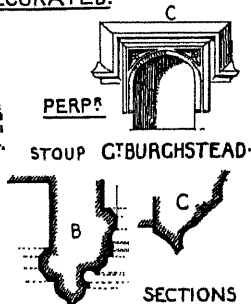
DEC. 14TH CENT.

PISCINA & SEDILIA · TILTY · ESSEX ·



DEC. 15TH

PISCINA · LITBADDOW · ESSEX ·



PERP.

STOUP · G^T.BURGHSTEAD ·

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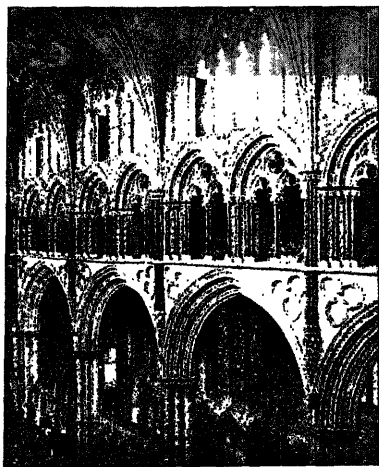
growth of these moulding forms from the simple roll or chamfer on the edge of the early arch forms should be carefully observed, as it will be seen how it was affected by the practice of building large arches in several diminishing orders. Thus it was by the gradual cutting away of the outer angles of these simple forms and by the addition of a hollow in the inner angle, that the whole series assumed the appearance of an inclined plane or large chamfer, as will be noted in the Decorated Style. These mouldings are used in the greatest profusion during the Early English period, and owing to their deep recesses produce beautiful effects of light and shade. The "Tooth" ornament previously mentioned is usually placed in the hollow mouldings round arches, capitals, and string courses.

The capitals are varied in their carved ornament where these are single or grouped, as in the illustration (Plate X); they are frequently covered with the "stiff-leaf" foliage; birds and human heads are also at times introduced. The plain bell-shaped capital is the one most often met with, and is always so beautiful in shape and fitting for its purpose that it requires no embellishment (p. 81). The shafts to these plain capitals are frequently of Purbeck marble, and the bases of the Attic type, with the "Scotia" moulding deeply cut. Buttresses develop from the flat Norman type, some of them being ornamented with niches and statues, with a small gable on the top. The "flying" buttress made its appearance during this style; it is an arrangement to carry the thrust of the nave vaults over the side aisles to the outside wall down to the ground; these thrusts are therefore counteracted by arches, spanning the aisle roof on the outside, and supported by the vertical masses of the buttress. Westminster, Chichester, Salisbury and Exeter have flying buttresses. In France, in consequence of the greater height of the churches, the flying buttress was employed on a far larger scale than in England, where the thrust of the vault is sometimes only

EARLY ENGLISH ARCHITECTURE

counteracted by extra thick walls, or by arches concealed beneath the aisle roofs. This was the method employed in the two great churches at Caen.

The methods of vaulting in the Early English period were greatly in advance of the simple forms adopted by the Norman architects. The pointed arch allows of arches of various widths but of equal height to be used, giving effect which could not be satisfactorily obtained in the vaulting of an oblong space

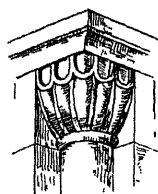


Angel Choir, Lincoln

when semicircular arches alone were employed. The plain four-ribbed vault was at first the more usual, intermediate ribs were afterwards introduced in the more complex vaults with a ridge rib running the entire length of the vault, parallel to the side walls.

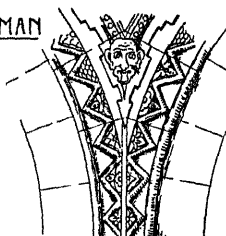
The very few remaining wooden roofs of this period are as a rule of wagon-shape, with the principal beams or trusses, at intervals of ten or twelve feet, these beams being frequently carved with ornament characteristic of the period.

STONE CARVING
OF VARIOUS PERIODS



WADE THANET

NORMAN



CLIFFE KENT

PERIOD



CHRIST CH. CANT.

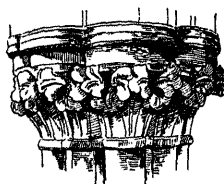


TICKENCOTE RUTLAND

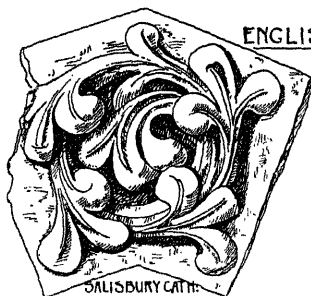


ROMSEY HAMPS.

EARLY

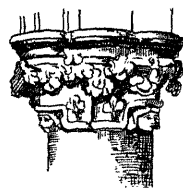


STAMFORD LINCS.



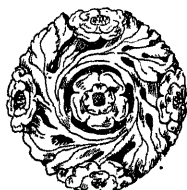
SALISBURY CATH.

ENGLISH



STAMFORD LINCS.

DECORATED



WELLS CATH.



HECKINGTON LINCOLNSHIRE

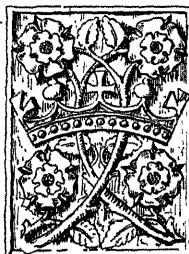


WELLS CATH.

PERFEN-



WESTMINSTER WILTS



WESTMINSTER ABBEY

DICULAR



WARFIELD SUSSEX

The importance and the magnificence of the nave arcades and triforium are the most noticeable features on entering a large Early English cathedral or church. The triforium is as a rule the most lavishly-decorated portion of the building; at both Salisbury and Lincoln it is most beautiful in effect, although it differs in the arrangement of the groups of arches.

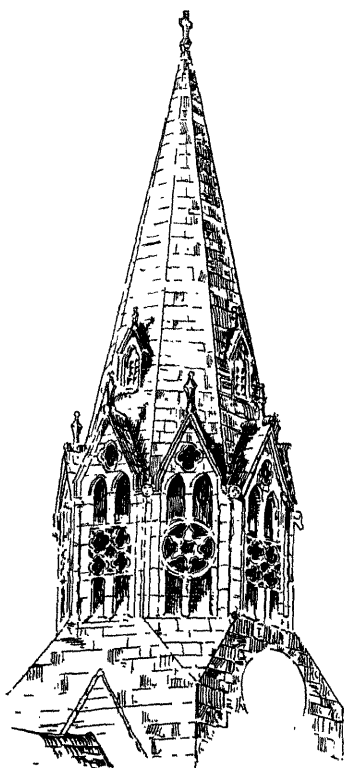


Trefoil Arches with "Tooth" Ornament

At Salisbury there are four arches to the bay, foiled and enclosed, with a common arch-moulding the width of the bay. At Lincoln, also, four arches fill up the bay but they are disposed differently, being in pairs with a common arch moulding enclosing each pair, and springing from a central support of clustered columns, with a quatrefoil over each pair of arches. Small churches seldom have a triforium, the clerestory in consequence being slightly larger in proportion. Chapter-houses

EARLY ENGLISH ARCHITECTURE

to the cathedrals were more usual at this period, and their peculiar and clever construction deserves attention. They are most frequently octagonal in plan, with a central column from which the vaulting ribs spring to meet others from the angles of the



LOSTWITHIEL CORNWALL

polygonal walls; sometimes they are rectangular as at Chester, when the vaulting is of course different, no central support being necessary. At Lincoln the chapter-house is decagonal, but this is very late in the style if not actually Decorated. The exterior of an Early Gothic church presents a towering upward vertical treatment, and, judged by the one complete building remaining in this style, Salisbury Cathedral, is of the greatest beauty; the view of this building from the north-east (see p. 75) presents the most perfect architectural composition that we possess, centrally crowned as it is from this aspect by its magnificent tower and spire raised 404 feet high.

The transition from the Early English to the Decorated style was most gradual, and we have many instances where, except

for the records in the church archives, it would be impossible to distinguish between thirteenth and fourteenth century work. An interesting specimen of a mixture of these two styles is given here. This handsome arcade (p. 89) has distinctly decorated

capitals supporting trefoil arches of Early English character with a double row of dog-tooth ornament upon them. It is not likely that the capitals in this case were inserted at a later date than the arches, although this was at times done, but it more probably shows the practice which often displayed itself of blending the best features of these two periods together with



King's Sutton Spire, Northants

success. But differences of character force themselves on our notice after a time, and the great change to be observed is in the treatment of the windows which become wider, and possess many more lights with handsome traceried heads. The triforium shrinks in size and the clerestory naturally enlarges, the vaults increase in the number of their ribs and the complexity of their arrangement. Ornament changes, for we find the "Ball flower"

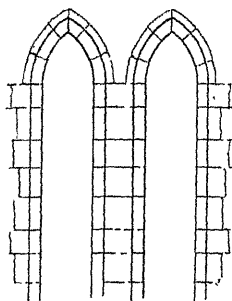
(see Glossary) substituted for the tooth ornament, and the "stiff-leaf" foliage is replaced by more natural forms such as the oak, maple, and bay with the characteristic "seaweed" or wavy leaf. Mouldings are not as a rule so deeply recessed, and are cut on the chamfer block instead of the square, and the dripstone mouldings usually terminate in the head of saint, king or queen; the carving in such details as these terminations, and in the canopies and capitals is finer and more delicate than was general in Early English work, and this elaboration was carried out even to the summit of their spires, Lichfield being a notable example in this respect. Lostwithiel also has a spire of transition character interesting in the method of arrangement and pattern of its openings at the base of the octagon.

CHAPTER VIII

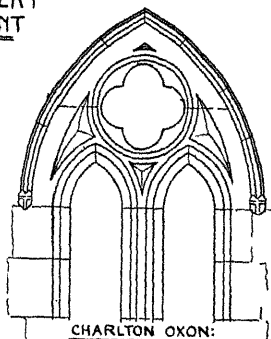
THE DECORATED OR MIDDLE-POINTED STYLE

1307—1377

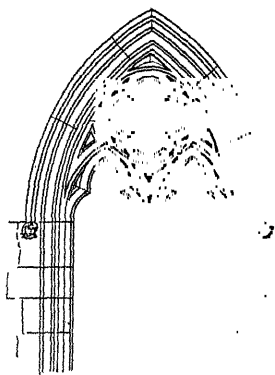
GOTHIC TRACERY
DEVELOPMENT



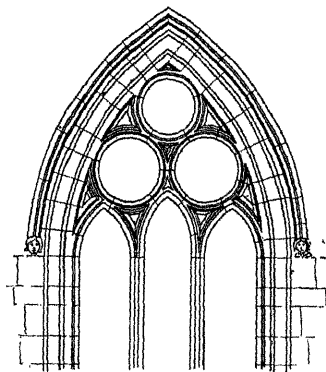
ST GILES OXFORD



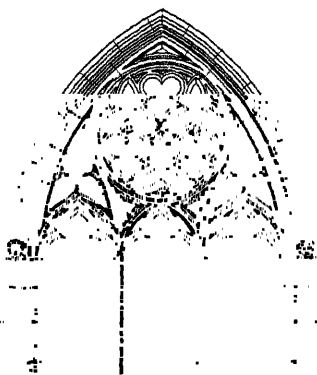
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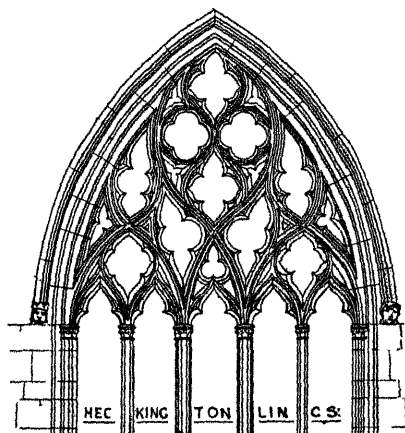
CROFT YORKS:



BOURNE LINCOLN.



HOWDEN YORKS:



HEC KING TON LIN C.S:

CHAPTER VIII

THE DECORATED OR MIDDLE-POINTED STYLE

1307—1377

THIS second or Middle-pointed Gothic period is conspicuous by the tracery of its windows, which in its early stage is purely geometrical in its arrangement. Gradually, however, this tracery, although maintaining in a measure its geometrical constructional lines for its leading patterns, becomes more complicated in its forms, developing into the Flowing, or, as more generally understood, Decorated style. It has already been noticed how inappropriate the term "Decorated" is; the "Geometrical" for the earlier phase and the "Flowing" for the later would be a much more intelligent division, as denoting the character of the tracery found in the windows, arcades, niches, buttresses, etc. of each style. All Gothic building was more or less in a state of transition, as no style was in vogue for any lengthened period without making—at first, no doubt, trifling—steps towards the evolution of a succeeding style. Thus we find with the Decorated, or Middle Gothic period, allowing at its fullest seventy years (1307–1377), from which period the transition from Early English, and the development, or debasement, to Perpendicular has to be taken, that only a short space, at the most thirty years, is left for the fully-developed Decorated character to display itself.

By the dated shrines and monuments in many churches work

THE DECORATED STYLE

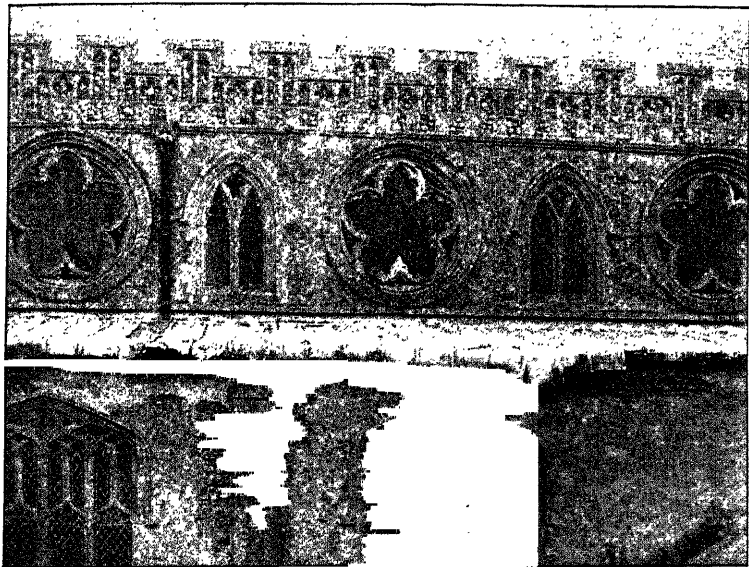
may be observed showing well-marked Decorated features and traces of Perpendicular character side by side; that is, the tendency to panelling is clearly visible, and yet the other details of cusping and carving are clearly middle fourteenth century in character.

The Decorated style is not, as its name suggests, the most lavishly ornamented of all the Gothic periods. Indeed, apart from its handsome windows and multi-ribbed vaults, it is less ornate in many respects than the Early English, and not to be compared with the Perpendicular, where the display of ornamental detail is so profusely, and at times needlessly, employed.

Fine examples of flint panelling and tracery work are found in this as well as in the Early English style, particularly in Norfolk and Suffolk, where this material is plentiful; it has a most pleasing effect, breaking up otherwise monotonous wall-surfaces.

In a brief analysis of the Decorated style the first and most important details to notice are the windows, and on referring to the plate (No. XI, p. 95), their development can be traced. The window is divided by vertical mullions into two or more compartments or lights (the magnificent Decorated east window of Carlisle Cathedral has nine, the total width being 33 feet). When three lights are used, the centre light is, at times, raised higher than the side ones. In the Early Transitional two-light windows the tracery is of most simple geometrical form, the two compartments having simple foiled heads and plain quatrefoil or hexafoil above, as at Croft, Yorks (see Plate XI). At Howden, on the same page of illustration, we see a good example of a three-light geometrical traceried window a little further developed; the centre circle at the head of this window is filled with two descriptions of trefoiled openings denoting pure Decorated work of an early date. Late in the style we get the window at Heckington, Lincolnshire, of five lights with beautiful flowing tracery on geometrical lines, and the circle now elongated at the top and bottom

flowing into the mullions on each side of the centre light, and upwards into the soffit of the arch mouldings. It will be noticed in the last example that the geometrical character of the tracery is almost lost, and towards the end of the style in most examples it is even less perceptible, the tracery approaching in some degree the French flamboyant¹ character,



Clerestory Windows, Cley Church, Norfolk

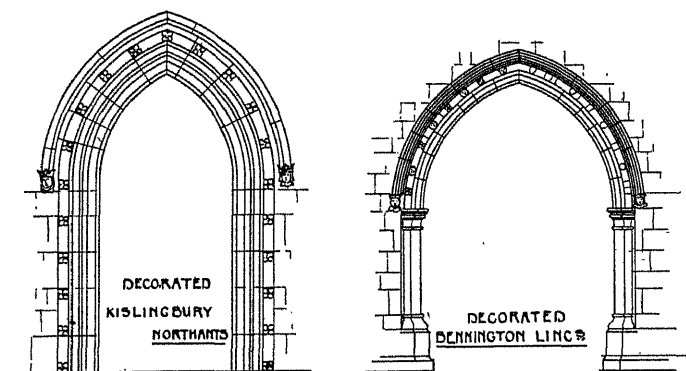
only not carried out to the same extent. Many circular windows are found in this style, as at Exeter, Chichester, and Cley, Norfolk; and sometimes in the clerestory and towers curious spherical triangular-shaped windows, as at Lichfield and Alberbury, Shropshire.

The doorways are not nearly so distinctive as the windows,

¹ See Glossary.

THE DECORATED STYLE

they are mostly single, and the arch mouldings, instead of being broken at the spring by capitals and shafts, are at times carried right down to the ground, as at Kislingbury, Northants. Where the arch mouldings are carried on carved capitals, it is easy to distinguish the style by the character of the foliage, which is now no longer of the "stiff-leaved" Early English variety but is much more naturalistic, and the plain capitals, which are much harder to distinguish, have a greater number of mouldings forming the abacus.¹ The most usual form of arch in



these doorways is the one struck from an equilateral triangular base, but the "Ogee" arch is also found. The dripstone of two or three mouldings is frequently terminated with a head, or a boss of naturalistic foliage; over the Ogee-headed doorways the dripstone is richly ornamented with crockets, and crowned with a finial at the apex. A specimen on a small scale can be seen in the arched piscina (see Plate IX, p. 83).

The ornaments of this style are very beautiful and characteristic, natural forms being used with but little modification and with the most exquisite effect; the oak, the vine, the syc-

¹ See Glossary.

more, and the distinctive seaweed foliage (see Plate X, p. 87) are found in profusion. An ornamental detail quite peculiar to this style is the Ball-flower (see p. 79); it is a small circular bud of three or four leaves and occupies the same position in mouldings as the Tooth ornament of the Early English period.

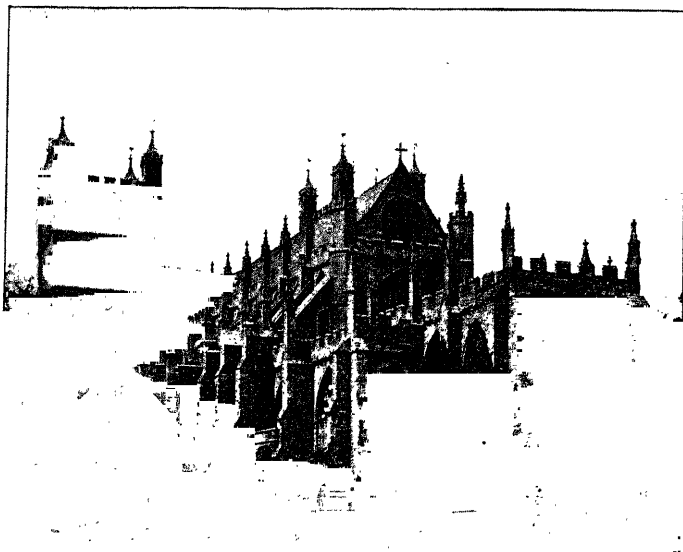
Another ornament frequently found is the square-shaped four-leaved flower with a berry in the centre; these are placed, as a rule, in the hollow member of the cornice mouldings on the outside of the building, disposed at regular distances from each other. At first the diaper patterns followed the Early English designs very closely, but they became more varied and freer as the style developed; the Chapter-house at Canterbury has good specimens of Decorated diaper work. As the style approaches the Perpendicular period this diaper work entirely disappears, panelling taking its place.

The fourteenth-century mouldings (see Plate VIII) present no great contrast to the Early English, they are, however, more frequently cut on the chamfer block instead of on the rectangular form; these mouldings are chiefly composed of rounds and deep hollows (see p. 79) freely divided by fillets, with ornaments characteristic of the style placed in the recessed members. As the style advances the deeply sunk mouldings give way to the shallow "ogee" shape, which became the characteristic form of the succeeding period.

The vaults of the fourteenth century are most elaborate; the intermediate ribs are increased by numbers crossing and re-crossing each other, forming beautiful stellate patterns (p. 127). The intersections of these ribs are covered with carved bosses of foliage, a larger boss being placed on the keystone of the main vaulting ribs. Wooden roofs are not numerous, many of them have been destroyed, and those that fell into decay replaced by later work. Penshurst Great Hall has a good specimen of a wooden trussed roof of the Decorated period.

THE DECORATED STYLE

The general appearance of fourteenth-century Gothic work is one of great refinement, with the most perfect execution of all its details. The interior presents a very light effect as the triforium decreases in height and the clerestory becomes more important, providing larger windows for the beautiful stained glass. This increased size of the traceried windows left less



Exeter Cathedral

blank wall-space, and the greater width between the nave arcades necessitating stronger vaults, more important buttresses were also required to counteract their thrust. These buttresses were in consequence important features, of great projection from the walls, and often elaborately designed with niches and canopies and profusely ornamented with crockets and finials.

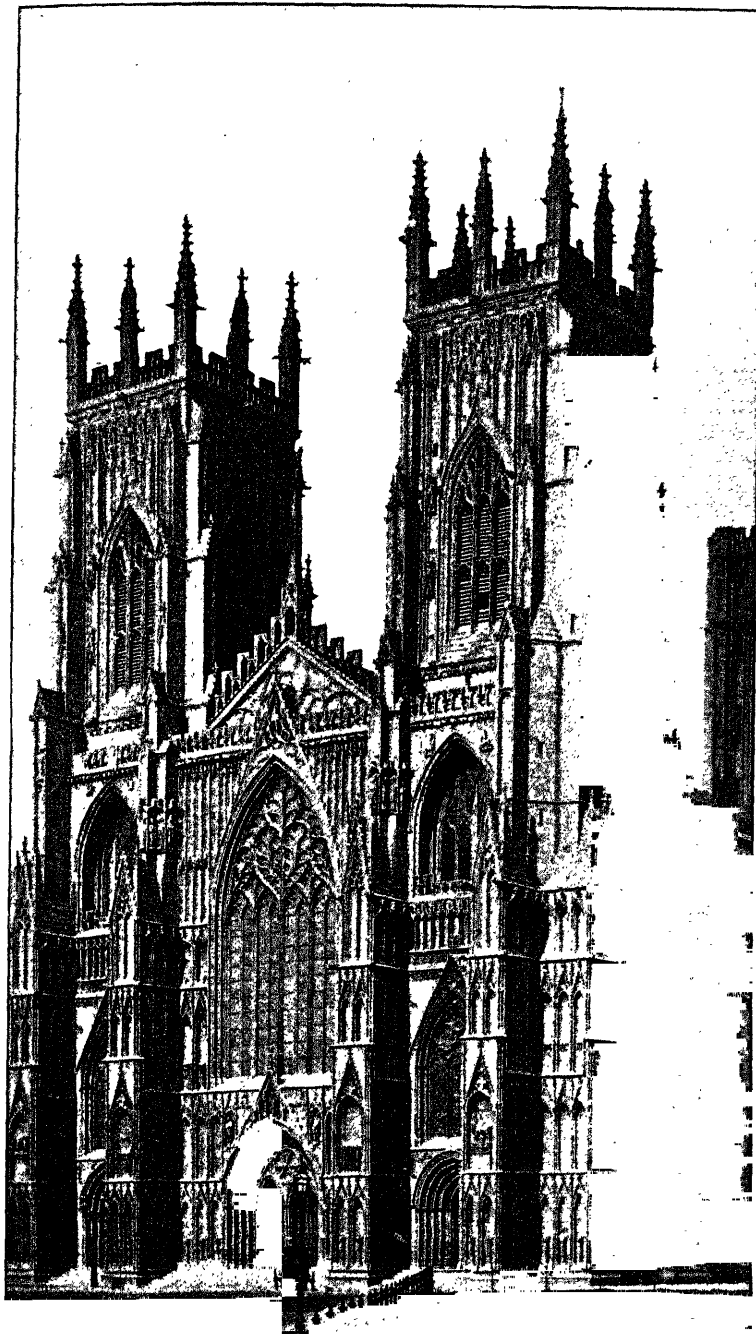


PLATE XII.—YORK MINSTER

Towers and spires (see p. 103) are lofty, and pierced with openings of Decorated tracery with crockets and finials on the outer arch moulding; these openings are, as a rule, unglazed. The tower at Lincoln, the spires at Lichfield, and the magnificent west front of York Minster are excellent examples of this style.

CHAPTER IX

THE PERPENDICULAR OR LATE-POINTED GOTHIC

1377—1547

CHAPTER IX

THE PERPENDICULAR OR LATE-POINTED GOTHIC

1377—1547

THE division between the Middle-pointed (Decorated) and this Late Gothic is very difficult to determine as the alteration is so gradual; but a great difference does exist when the Perpendicular style has reached its full development.

If Gothic Architecture, as we have previously noted, embodies in a marked degree the "Vertical" principle as its character, then, indeed, in the Perpendicular style is this principle carried out to its fullest extent.

It is during the last thirty years of the fourteenth century that a nearer approach is made to a distinctively English style than in any other of the preceding phases of Gothic Architecture which we have been considering.

Here we notice large windows with mullions running vertically from window-sill to the soffit of the arch. The piers, frequently grouped narrow shafts, run up from base to apex of the arch with little if any break, and where there is no triforium the outer shafts of the nave arcade are continued to the springers of the vault. The details also are of a vertical character, the entire wall of a building being frequently covered with panelling in which vertical lines are the predominating principle. The same effect is to be observed on the outside,

THE PERPENDICULAR STYLE

emphasized by the square embattled tower, buttress, and pinnacles.

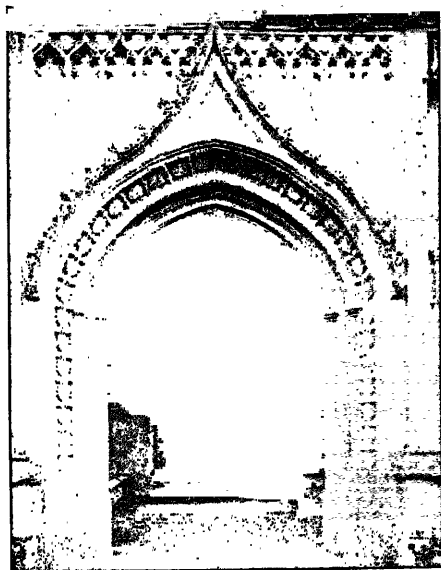
As the later Decorated style was known also as the "Flowing" Gothic on account of its freedom of line in the traceried windows and its ornaments, so this style might well be called the "Rigid" on account of the want of flexibility of its main forms.



Cromer Church

The Perpendicular openings, when the style has fully developed, are a great contrast to the previous period; the "four-centred" arch is now largely employed and enclosed in a squared hood moulding (see illustration, p. 112). Other doorways retain the equilateral arch of Decorated form, either with the square hood moulding placed over it in the same manner, or decorated with a canopy enriched with crockets and finial, small pinnacles being placed on each side.

The distinguishing feature of Perpendicular Architecture is found in the windows, which undoubtedly must have given the name to the style (p. 113). Many of these windows are of great size, in some cases almost filling the entire east and west ends of a church; they are divided into numerous lights, and again into compartments, by horizontal transoms.



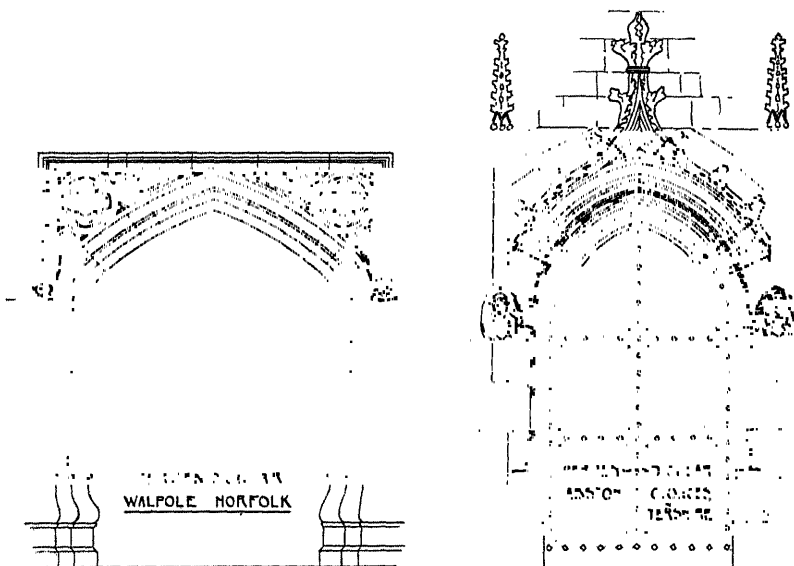
North Porch, Sall, Norfolk

In some of the large windows the design has the appearance of two windows placed together under a common arch moulding, the central mullion being thicker and an independent arch springing from it on either side to the main arch, and enclosing an equal number of lights. In fact the character of a Perpendicular window is distinct from the Decorated on account of the possible separation of its parts, being as it is groups of similar compartments repeated several times over; whereas the Flowing

THE PERPENDICULAR STYLE

Decorated (see Plate XII: York, west end), no matter how large the window, is a single design incapable, without destruction of its effect, of any separation in its parts.

Late in the style the horizontal transoms become more frequent and are ornamented with small battlements, dividing the windows into still smaller compartments. These openings

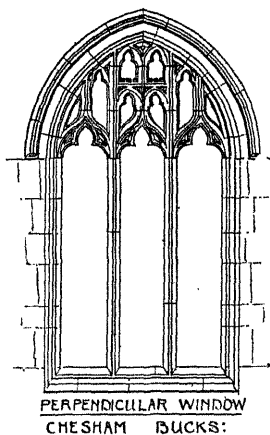


differ but little in design from the panelled walls surrounding them.

Circular windows were not used during this period, but at times the tracery in the earlier examples was replaced by Perpendicular work, producing an awkward effect, the straight vertical lines being ill adapted as a circular filling.

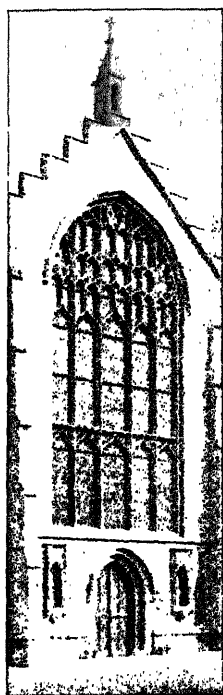
The "four-centred" arch, as well as the usual equilateral arch, is much used for windows. In the nave arcades of

important churches the piers are high, slender, and lozenge-shaped in plan; the triforium disappears and a higher clerestory with large windows is found resting on the string-course running across the apex of the arches of the nave and choir arcades. These churches present a very light appearance inside on account of these large clerestory windows and the small wall space between them. In the most elaborate examples the entire wall surface of the interior is



covered with panelling which extends from floor to roof.

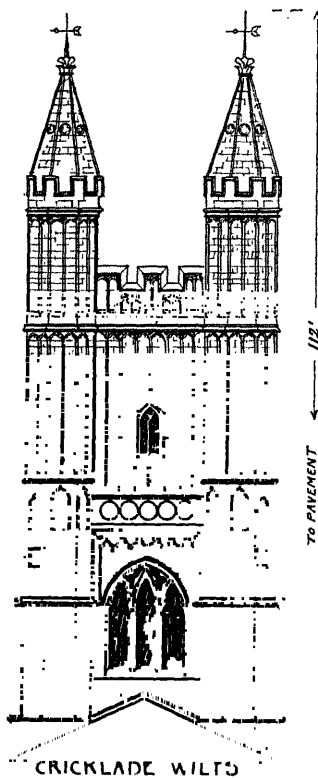
The ornamental details of the Perpendicular style are very varied, they differ from those of the earlier style in being more squarely cut, the foliage ending in blunt points usually fitting into square forms. Embattled transoms and panelling, as already noticed, are most usual decorations, and no doubt of the period can exist when these features are found. A few ornaments in addition are peculiar to this and the Tudor



St. Mary's Church, Bury

THE PERPENDICULAR STYLE

style, such as the portcullis and the rose, which are used in great profusion, both as the badges of the Tudors, being found in the royal chapels. For the outside of Perpendicular churches,



especially in Norfolk, flint paneling of elaborate traceried patterns was much employed as in the preceding period with good effect, breaking up the even colour of the stonework. Heraldic bearings are largely adopted, not only on tombs, where as coats-of-arms they had some significance, but they are also freely used in the centre of quatrefoil panels, and supported by small figures as dripstone terminations.

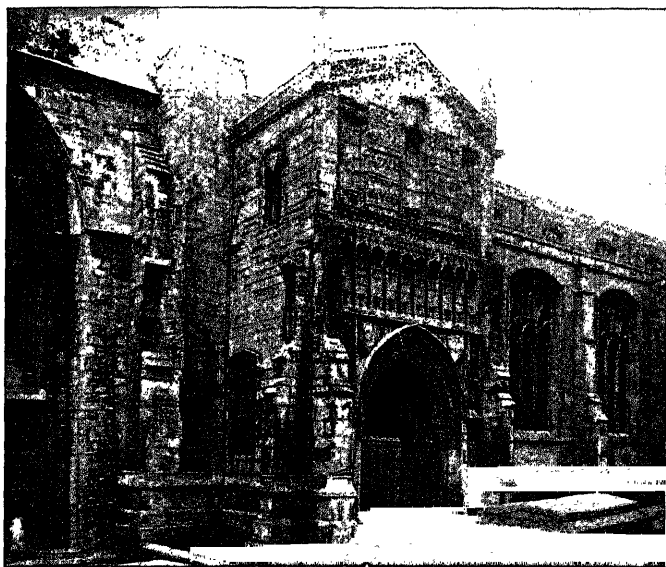
Figures in great variety were very generally employed throughout this period carved in both wood and stone, placed in canopies, on screens, supporting brackets, and even on capitals, as at Stoke-on-Teignhead, Devonshire. The execution of such carvings, especially in the woodwork, was as a rule excellent, deeply and clearly undercut, as in some of the "miserere" seats, and in poppy-heads on the bench

ends (see p. 178), but in later Tudor work less time and skill appear to have been bestowed on these ornamental details.

Perpendicular towers and steeples are to be seen all over the country; the spires show but little difference from those of the preceding style, but their date may be easily discovered by

their details. Towers uncrowned by spire or steeple are most frequently employed, such as at Cromer and Cricklade (pp. 110, 114); they have four pinnacles at the angles, that at Cromer being richly crocketed with handsome parapet and unusual embattlement.

The porches are at this period a much more important part of the church, some of them being very large with a room



St. Nicholas Church, King's Lynn, Norfolk

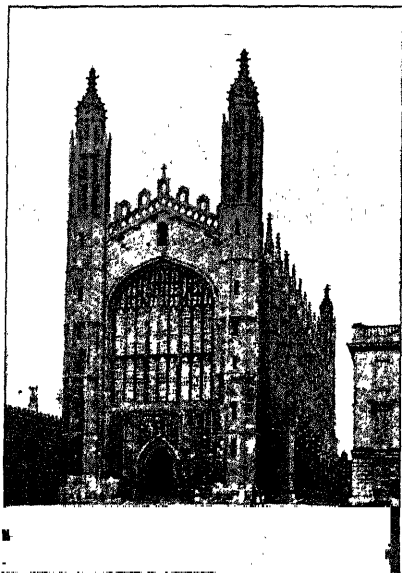
above (as at King's Lynn) called the parvise, used at times as a library, a clerk's room, or to keep the parish registers and documents.

Tudor Architecture has not been separated from Perpendicular as the important features are identical, there being no strict dividing line, the chief indication of Tudor work being that as a rule more ornament and a greater profusion of stone panelling

THE PERPENDICULAR STYLE

are displayed, not always to the improvement of the general effect. Henry VII Chapel, Westminster, and King's College Chapel, Cambridge, belong strictly to the Tudor period and are two most notable examples.

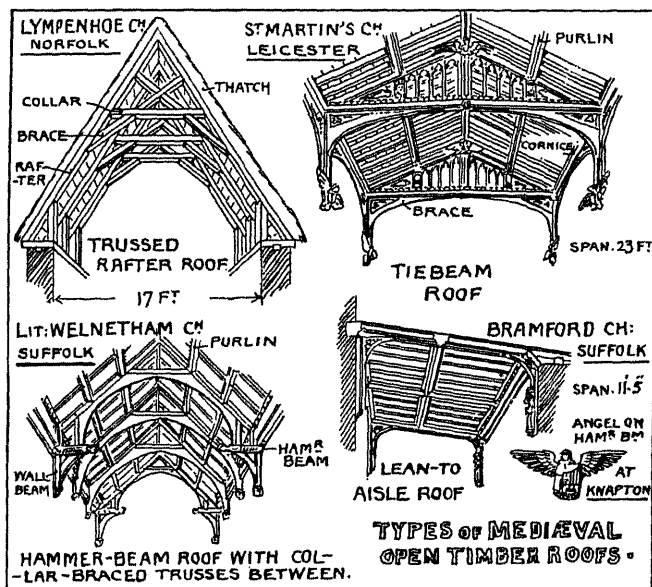
If in the Perpendicular and Tudor styles some of the beauty and refinement of earlier Gothic was lost, it must be remem-



King's College Chapel, Cambridge

bered that this period showed a marked individuality, and a wonderful variety of construction in the roofs both of stone and timber, different from anything that preceded this style. The Fan Vaulting, such as can be seen in Henry VII Chapel, Westminster, and the cloisters, Gloucester, is peculiar to English Gothic Architecture and the Perpendicular period, no vaulting of this character being found abroad. In the open timber roofs there is a variety of shapes, the Hammer-beam type being per-

haps the most beautiful, as at Cawston, Norfolk (see illustration, p. 118). All the details and framing of these roofs are as a rule of excellent workmanship, elaborately carved, with traceried panels, and with figures, usually angels, placed at the ends of the principal beams and brackets. Westminster Hall is a fine example of a Hammer-beam roof of this period, with a span of sixty-eight feet.

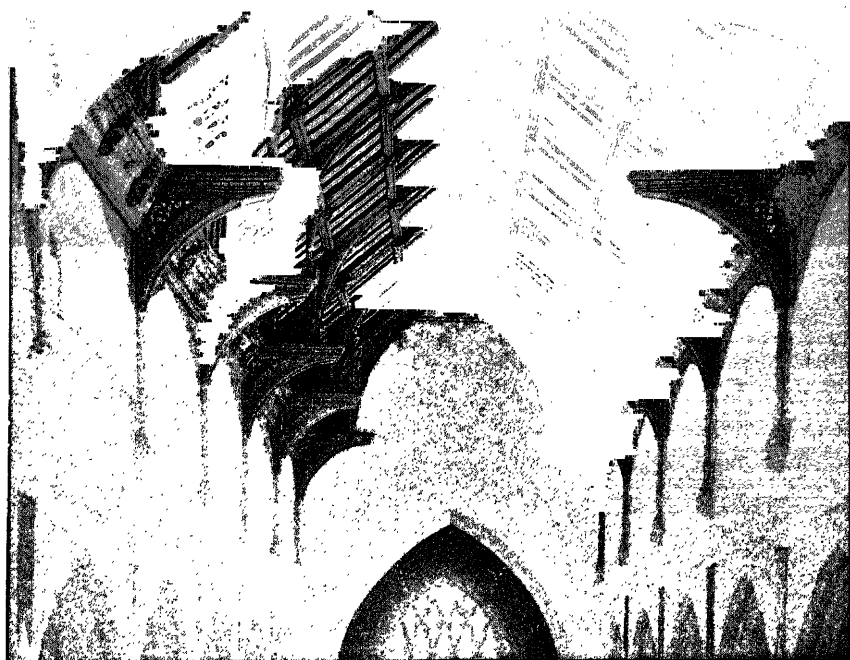


The types of roof most commonly employed are given here, and the names of the principal members indicated on the drawings.

During the reign of Henry VIII, and shortly after he had suppressed the monasteries in 1540, the Renaissance mode of building found its way from the Continent, and again classic influence forced itself to the front, after lying dormant in England for nearly five hundred years.

THE PERPENDICULAR STYLE

This Renaissance movement was destined to be the death of Gothic Architecture, which gradually fell into disrepute, as

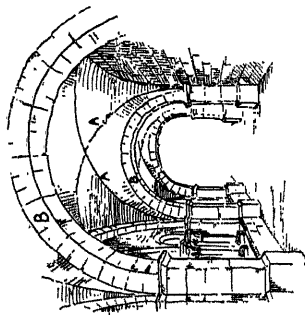


Hammer-beam Roof, Cawston, Norfolk

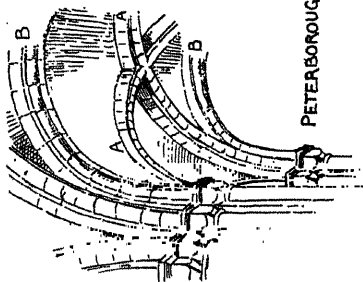
after the reign of Henry VIII only a few buildings were erected (these chiefly at Oxford) with pure Gothic details. Of such buildings the staircase to the hall at Christ Church, Oxford, is a notable example (1640).

CHAPTER X

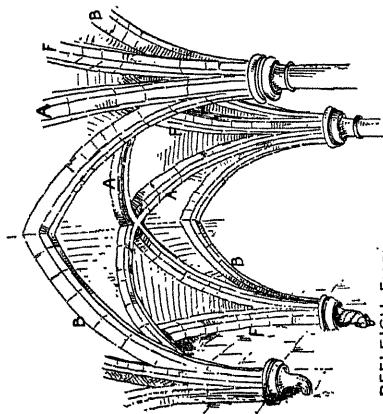
Vaults



ST GERMER DE FLY,
N. FRANCE



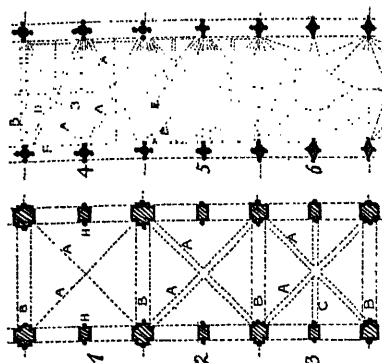
PETERBOROUGH.



BEELEIGH, ESSEX



CAEN, NORMANDY.



SEMICIRCULAR.

1. Cross Vault (with ribs).

2. " " (without ribs).

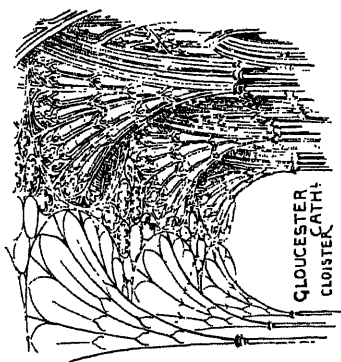
3. Semicircular Vault.

POINTED.

4. Vault (with diagonal, transverse, and ridge ribs).

5. " " (with oblique ribs and ridge ribs).

6. FAN VAULTING.



GLoucester
CATH.
CLOISTER

CHAPTER X

VAULTS

AN account of the different methods of covering buildings forms a very interesting chapter in the history of Architecture, and deserves separate treatment. Indeed the form of the roof in most cases governs the appearance and arrangement of all the main constructive features inside and out.

In Egypt, although the arch was known, the builders preferred to cover their temples with slabs of stone supported by numerous pillars.

The Assyrians also used the arch for the great gateways of their thick-walled palaces, and may have covered their long narrow rooms with brick vaults. They certainly used them in the large drains beneath their palaces, but these being below ground could not suffer ruin from the cause which would affect them in a building, viz. the yielding of the walls or abutments to the outward pressure exerted by the arch or vault.

The Greeks used stone or marble slabs upon a wooden roof, being unwilling to take so much floor space for columns as the Egyptian system required.

From Etruria, Rome adopted the arch and vault, and developed them on a scale never since surpassed. These arches she used for her basilicas and the great halls of the public baths. Her temples, like those of the Greeks, were roofed with wood as a rule. The form of vault used by them was, however,

VAULTS

lacking in adaptability to the requirements of mediæval builders; its effect was much too ponderous, and the space available for windows was too small to meet the ever-growing desire for large expanses of stained glass. But they had one point of superiority to those of a later time, and that was in the material employed. The vault was covered with concrete on the outside, was even entirely constructed of it sometimes, and so was independent of a wooden roof to shield it from the weather. Nearly all the forms of vault, now to be described, devised by the later builders, required protecting wooden roofs. This has proved the cause of their general destruction in neglected buildings, such as the English abbeys after the Dissolution, for when the roof was destroyed or decayed, the stone vault soon yielded to the action of rain and frost and fell into ruin.

The early and simplest form is obviously the continuous "barrel" or tunnel vault of semicircular form. The Romans improved on this by intersecting it with others of the same span and height. The edges where these intersect are called groins (see A, Plate XIII), and it is plain that in plan the space covered by each compartment of the vault will be a square. The Romanesque buildings on the Rhine, in Lombardy, Normandy, and elsewhere, adopted the Roman semicircular vault, sometimes without intersecting vaults (St. Sernin, Toulouse), more generally, however, with them (St. Germer de Fly). A perfectly plain tunnel vault may be seen in the chapel of the Tower, London, while that of Toulouse has a transverse rib or arch (B, Plate XIII) carried across at every pier in the arcade.

A further step in the development was that of carrying ribs diagonally across at the groins (A) as at Peterborough. This gave a more stable and finished appearance to the previously weak-looking edges of the groins, and actually added to the strength of the vault. But other difficulties presented them-

selves. There was first a question of appearance, and next a question of construction to be considered.

As has been already observed, a compartment of cross vaulting (1, 2, Plate XIII) is a square. But a width from pillar to pillar of the arcade, equal to the width of the main vault, is generally too great, and it was necessary to insert an intermediate pier (H, Plate XIII). The result was that one compartment of the vault covered two arches of the arcade, so that there was a want of agreement among the parts of the structure. To overcome this awkwardness an intermediate transverse rib (3, C, Plate XIII) was carried across over the intermediate piers supporting a small vault on either side, and dividing the square compartment into six parts instead of four; hence this system is known as "sex-partite," in contradistinction to "quadripartite" for that which has four divisions. The two abbey churches at Caen are good examples.

Though the lines of all the piers were thus carried up into the roof, yet there were still twice as many bays in the arcade as in the roof, and the effect of the vault itself is not good, for the meeting-point of the ribs not being opposite to the centres of the windows, it is impossible to place the windows so that they are neither out of the centre of their space nor hidden by the vault. The constructive difficulty, on the other hand, lay in the forms of the ribs. In a semicircular vault the transverse ribs (B, Plate XIII) will be semicircular also. Then the diagonal ones (A, Plate XIII) will be elliptical, and the flatness of the top was an element of weakness at a period when the mason's skill was limited. Or if the diagonal ribs were made semicircular they would rise much higher than the transverse ribs and those against the wall, and the result would be that each compartment would be domical in form, the line of the crown or ridge of the vault not being nearly level. The solution of both difficulties was only reached by the adoption of the pointed arch. It was then possible by making the transverse vault

VAULTS

more pointed than the main (or longitudinal) vault to cover an oblong space (4, Plate XIII), while the diagonal ribs could be semicircular or pointed as desired (4, Plate XIII). This was the Gothic system which made its first appearance in France early in the twelfth century, and about sixty years later found its way to England, Lincoln Cathedral choir being one of the earliest examples (1190). In France only transverse, diagonal, and wall ribs were generally used.

In England intermediate ribs (5, E, Plate XIII), which were not constructively necessary, were freely used (Westminster nave and cloisters), and a ridge was introduced at the crown of the main and cross vaults to transmit the pressure of the intermediate ribs to the centre. Later on small independent ribs were introduced, not springing from the walls, but joining one rib to another so as to make stellar patterns on the vaultings (Gloucester, Winchester, and Tewkesbury). The numerous ribs radiating from one point towards the crown of the vault may have suggested and led up to the distinctively English "fan vaulting." In this the ribs and the infilling are not distinct from one another, the latter resting on the back of the former, but the ribs are cut out of the same stones as the filling, the whole being as inseparable as the same panelling is when cut upon the surface of an upright wall, as in a building of the Perpendicular style (King's College Chapel, Cambridge).

"Pendant vaulting" is too elaborate in its construction to be fully described here. The effect of suspension in mid-air which it produces is gained by a very ingenious arrangement. A strong arch is carried from wall to wall behind the vaulting. Some of the stones of this arch are elongated downwards very considerably, and from these the small fan vaults are sprung (Henry VII Chapel, Westminster).

BUTTRESSING.—So far the internal appearance only has been described, but, as mentioned in speaking of Assyrian vaults, their construction requires that the thrust exerted by the

arches upon the outside walls must be counteracted in some way. In the case of a barrel vault the pressure is exerted equally along the whole length, and was commonly met by the great thickness of the walls. Occasionally, however, in Romanesque buildings a half-barrel vault was constructed below the triforium roof, which acted as a continuous buttress, and



Stellate Vaulting, Winchester Cathedral

carried the thrust over to the aisle walls and so to the ground. Cross vaults, however, whether semicircular or pointed, concentrate the thrust upon the part of the wall from which the groins or ribs spring, that is, over each pier of the arcades below. In the great Roman examples a buttress was provided by placing what was really a portion of wall at right angles to the main walls of the building opposite each pier.

VAULTS

But the mediæval builders devised a much more scientific and graceful method of resisting the thrust, by the "flying buttress." The whole construction consists of the following parts: a vertical buttress abutting against the aisle wall is carried up to a convenient height above the aisle roof, from this an arch springs till it reaches the nave wall at a point above the springing of the vault within where the greatest thrust is exercised. Lastly, at the top of the vertical buttress there is a pinnacle or similar mass of masonry which by its weight helps to ensure the stability of the whole arrangement.

In French cathedrals, where the height is very great, the system of buttressing is sometimes carried out beyond the usual width of the aisle, and so we often find a row of chapels opening out of the aisle (especially around the polygonal choir end), occupying the spaces between the buttresses. There are, then, often two tiers of arches and two vertical buttresses, as at Rheims. The most complicated example in England is that of the nave of Westminster Abbey, seen from the cloisters. The Chapter-house presents a fine simple type. In most English cathedrals the flying buttresses are very simple, or are concealed below the triforium roof. This is partly the result of their relatively thick walls, and the moderate height (compared to French examples) to which the walls are carried. The vast system of buttressing of some large French churches is certainly somewhat destructive of simplicity, and at times almost hides the real building, which is lost in a maze of pinnacles and arches.

CHAPTER XI

FRENCH GOTHIC

(INCLUDING THIRTEENTH TO FIFTEENTH CENTURY)

CHIEFLY COMPARATIVE

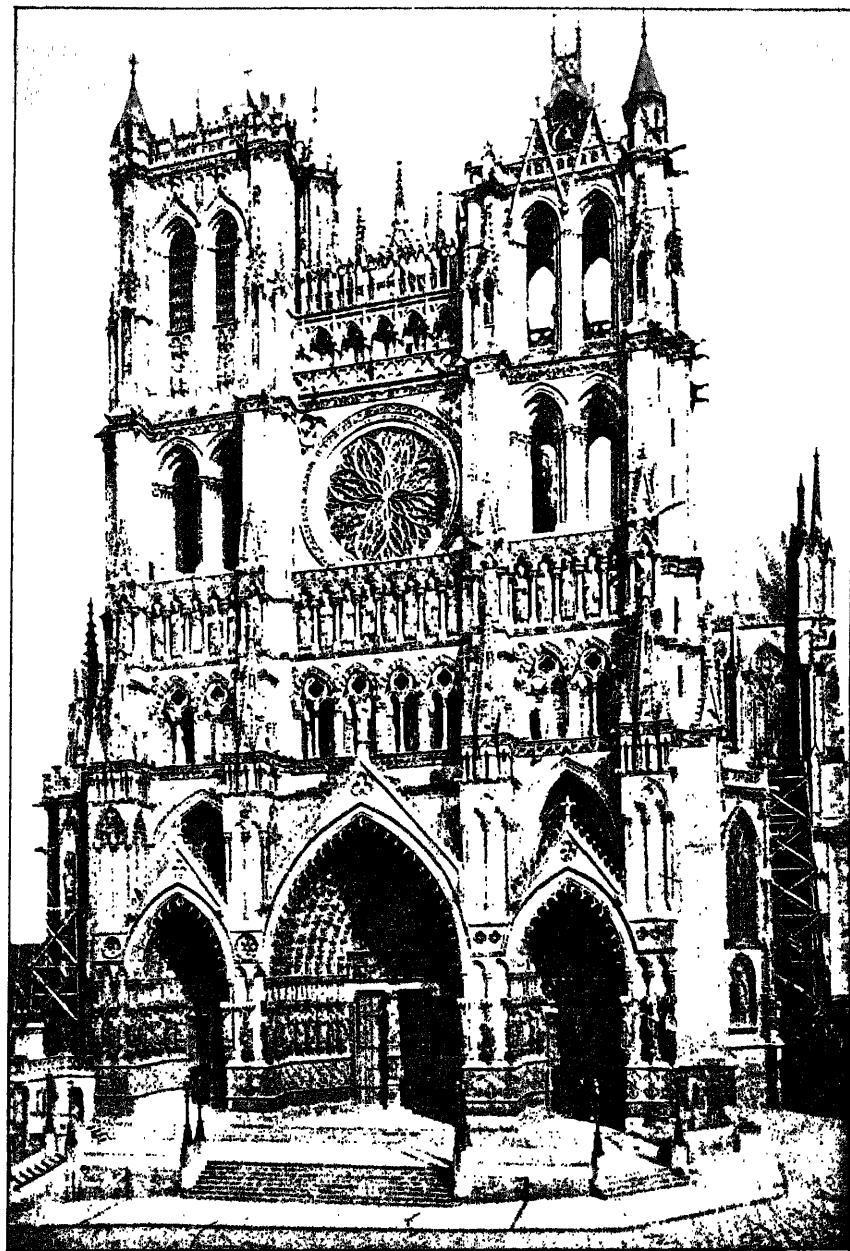
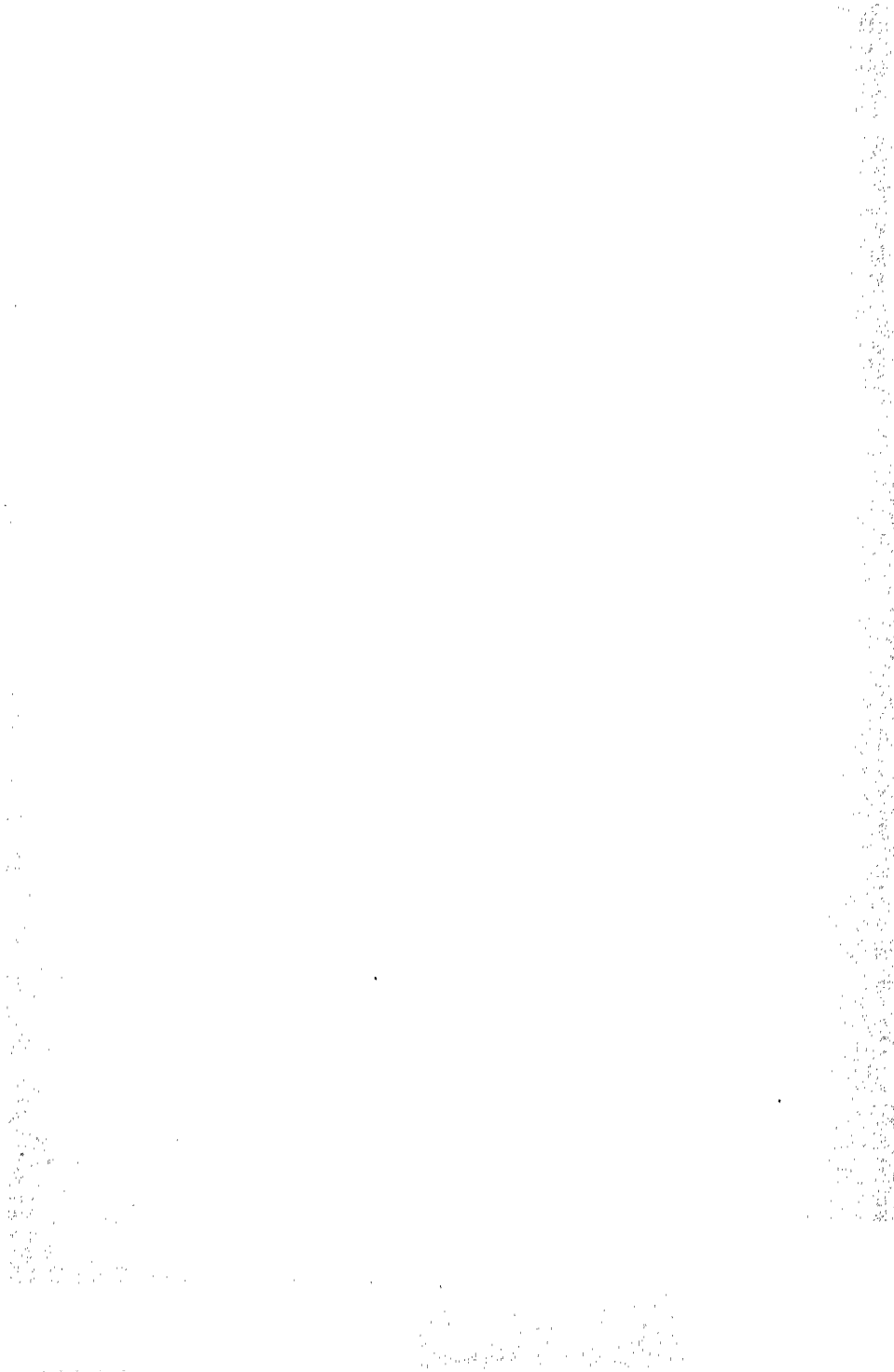


PLATE XIV.—AMIENS CATHEDRAL



CHAPTER XI

FRENCH GOTHIC

No attempt can here be made to supply an historical account of the development of French Gothic, but by short notes and a few illustrations it is hoped attention may be directed to at least some of the chief differences in arrangement and detail between French and English Gothic.

It has already been noticed in the chapter on English Romanesque that France was in advance of England some fifty years, but in the pure English Gothic work the adoption of forms and detail from the French is hardly noticeable.

There are three periods of French Gothic, corresponding approximately with our Early English, Decorated, and Perpendicular.

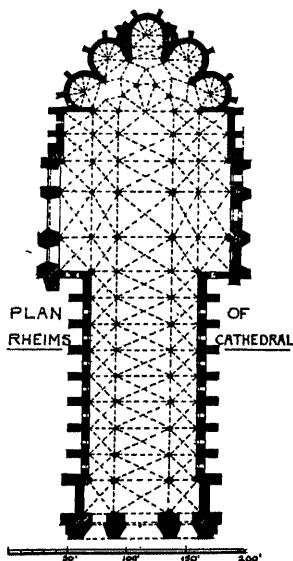
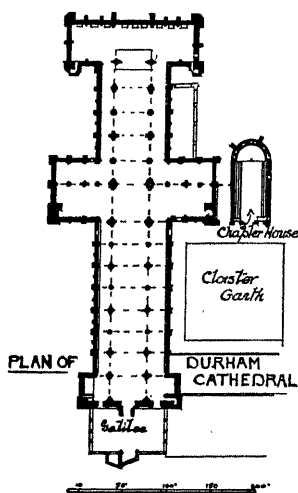
1. Primary Gothic, 1200—1300 (Chartres, Amiens).
2. Rayonnant, 1300—1400 (St. Ouen, Rouen).
3. Flamboyant, 1400—1500 (St. Maclou, Rouen).

It was during the thirteenth century that most of the chief cathedrals in France were erected. They were as a rule town churches unconnected with monastic buildings, and, partly in consequence of this, differ considerably in plan from those of England, which were generally abbey churches, possessing cloister, chapter-house, refectory, dormitories, and all the necessary offices of a great establishment.

A comparison of the plan of Durham (see p. 134) and

FRENCH GOTHIC

Rheims will here be useful. The French plan has usually the semicircular or polygonal termination with radiating chapels, these chapels extending as a rule down the side aisles of the choir, and often of the nave as well. This arrangement of the east end (apse or chevet) can in England only be seen at Westminster and Norwich; after the Norman period the



Comparative English and French Cathedral Plans

square east end was universally used. It will be noticed at a glance how greatly that of Durham differs from the French plan. Although a second transept is not uncommon in England (*e.g.* Salisbury and Lincoln), its position at the extreme east end is not found elsewhere. Here it is, however, not strictly a transept, but a chapel (the Chapel of the Nine Altars, 1242), serving the same purpose as those around the French apse. The transept proper has considerable projection, and the whole

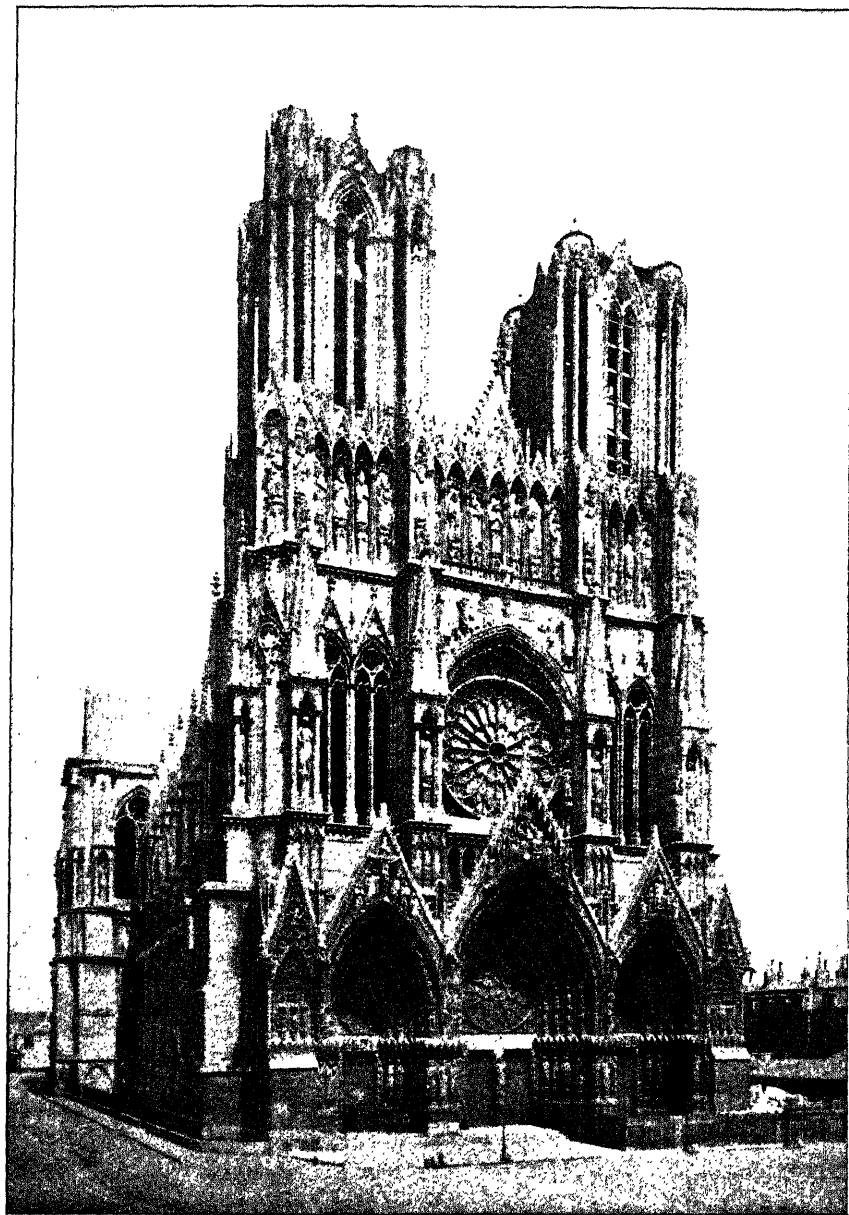
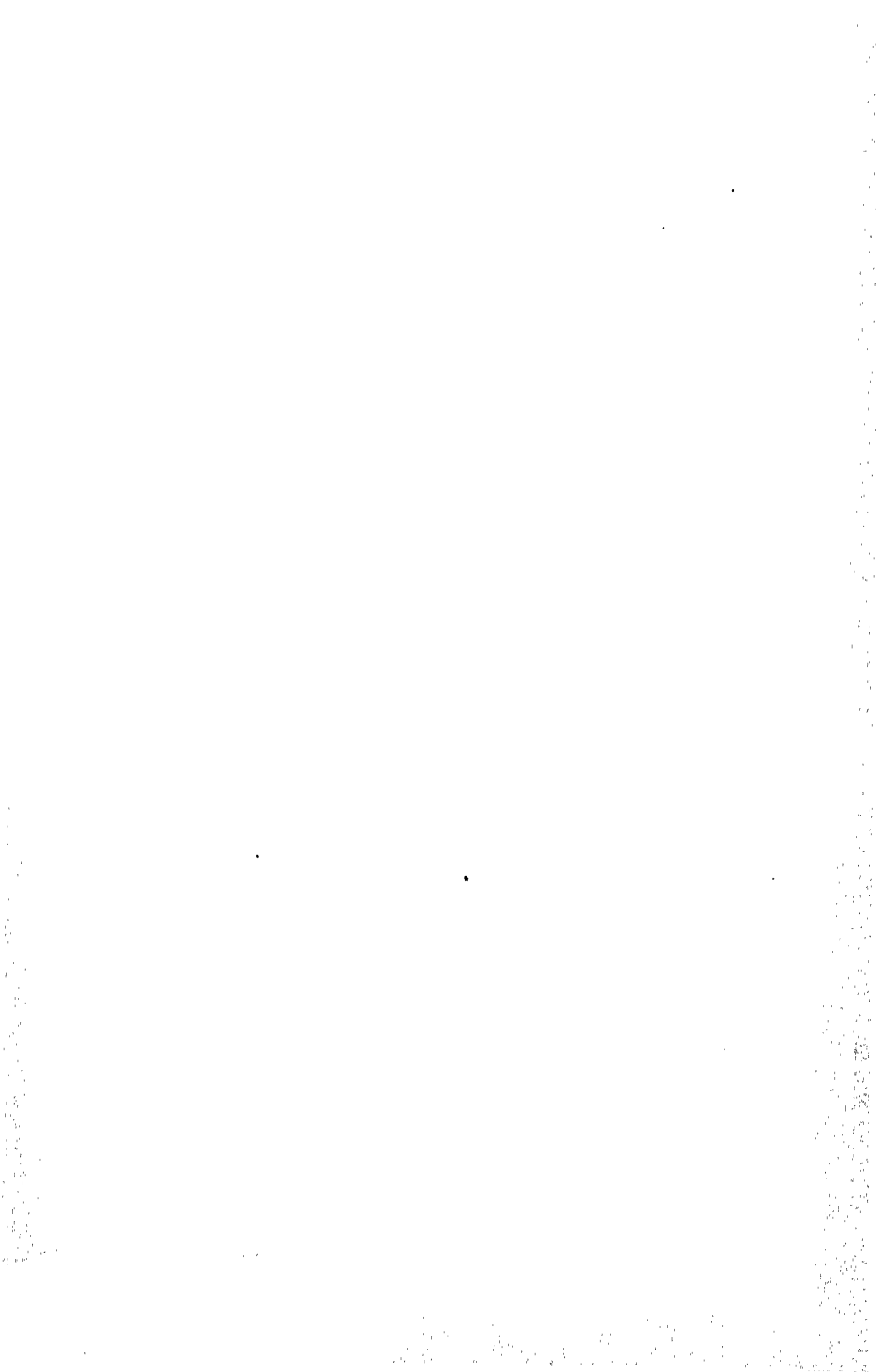


PLATE XV.—RHEIMS CATHEDRAL
135



plan is long and narrow by comparison with the French. In addition we find cloisters, and chapter-house, and a Galilee porch at the west end. The chapter-house is now rectangular, the semicircular end shown in the drawing having been removed. The doorways are comparatively small and narrow, and the buttresses of slight projection; the height of the nave being so much less than is usual abroad, the thrust of the vault requires in consequence less buttressing.

The external aspect of a large French cathedral, such as Rheims or Amiens (Plates XIV, XV), presents more clearly the towering vertical effect of Gothic building. Here we find innumerable flying buttresses, lofty towers and spires, as at Amiens, where the slender spire rises to a height of 420 feet; but this spire cannot be seen in the plate. In addition, the vertical character is enhanced by the much steeper pitch to the roof, enabling the ridge line to be more clearly seen from the ground.

Beauvais is a remarkable instance of a lofty roof—225 feet exterior height; only choir and transept of this remarkable building is completed; the spire of 500 feet fell in 1573.

This great height precludes the erection of a large square tower or stone spire in the centre of the building, such as those of Canterbury or Gloucester. The western towers of Amiens rise no higher than the roof ridge, and the central spire of Amiens is constructed only of wood. Had its height been in proportion to that of Salisbury, it would have had to be about 600 feet high, which of course would have been far in excess of any existing building. The same vertical effect is noticeable inside the building; plain circular columns, or with few attached shafts, are usual, in distinction to our clustered pillars, while the slender shafts which appear to support the ribs of the vaulting often run down to the ground. Horizontal lines such as string-courses, etc., are made as little prominent as possible, and the tall narrow clerestory windows carry the vertical lines far above the springing of the vaulting.

FRENCH GOTHIC

The French openings, especially the doorways, are of great magnificence, much larger and more decorated than the English specimens, a lavish profusion of sculpture and carving being bestowed upon them. The west façade of Rheims Cathedral is considered by many authorities the most beautiful Gothic structure of the Middle Ages; be this as it may, Amiens approaches it very closely, while Bourges, Auxerre, and Sens (see Plates XVI, XVII) also have portals of considerable importance and interest, the last mentioned being of early date, *circa* 1167. The north and south portals at the transept ends are also at times, and when the situation permits, of great beauty, in fact at Chartres they are more elaborately decorated than the western. The former were, however, built about 1280, and the latter prior to 1187, which accounts for the difference.

The three deeply-recessed portals at Rheims have pointed gables richly carved, the central one having projecting canopies. These portals together contain over five hundred statues. Above these handsome openings is the famous Rose-window, flanked on either side by graceful openings of four lights arranged in pairs. This circular window is nearly forty feet in diameter, and it is from windows of this form that the second period of French Gothic takes the name of "Rayonnant." Above this window on the second storey is a gallery of handsome canopied niches filled with figures, with a gable over the three central ones, on either side rise the lofty towers (originally intended to carry spires), the whole façade presenting the most glorious effect.

This same arrangement is to be seen in the principal façade at Amiens, excepting that the Rose-window is here placed on the first storey above instead of below the gallery of niches. The whole of this front seems to have been designed for the display of sculpture (see Frontispiece), as such deeply-sunk doorways would be heavy and ugly were it not for the figure reliefs carved upon them. On account of the numerous inci-

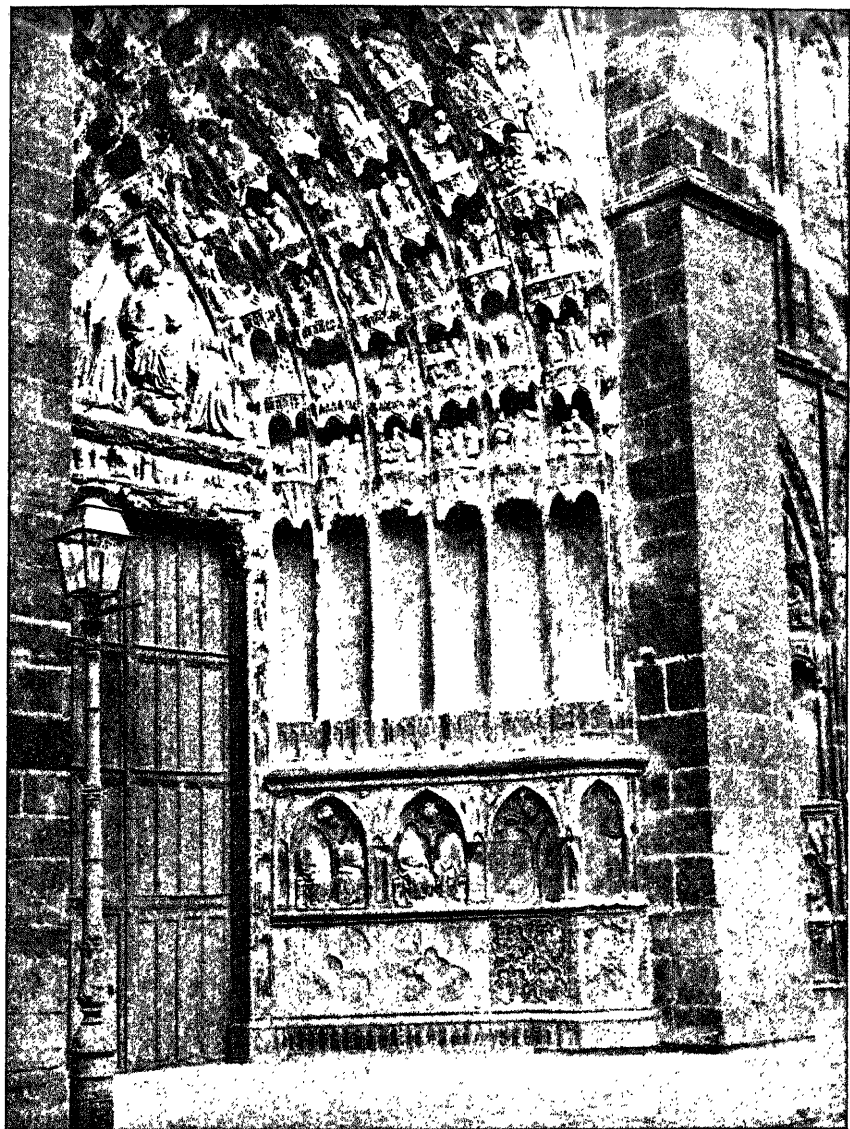


PLATE XVI.—AUXERRE PORTAL

dents from the Bible carved on this front Ruskin has aptly termed it "The Bible of Amiens."

The window tracery of the thirteenth and fourteenth centuries is not as a rule so good or elaborate in design as the English work of the same period, as the plainer plate tracery is the more usual in early French windows. The curious and beautiful "Flamboyant" is the final development of French tracery; the cusplings here are subordinate to the principal order of mouldings which flow upwards in flame-like curves.

The character of our fifteenth-century Perpendicular tracery is not noticeable in any of the French work; and no window can be found abroad to compare for purity of design with the best English fourteenth-century work, such as the windows of the east end of Carlisle Cathedral, or the west end of York Minster (see Plate XII, p. 103).

The classic tradition regarding the details of foliage carving seems to have lingered longer with the French sculptors than with the English, and the finish of some of this carving is not so fine as may be found in the Early English or Decorated style. As a rule such carving was placed at a great height round capitals of very lofty columns, so that the same finish in these smaller details was unnecessary in that position. Animals are much used in the carved decoration both in wood and stone, and are composed well and with fitness to the position they are required to fill.

Figure sculpture was very freely employed, and although uncouth, stiff, and Byzantine in character in the eleventh and twelfth centuries, gives us in the fourteenth century, as at Amiens and Rheims, some of the finest architectural sculpture ever executed, surpassing in beauty of form and expression anything to be found in England, and at times falling not far below the perfection of Greek work (see Frontispiece).

The external appearance of a French Gothic cathedral is thus of greater magnificence and displays more wealth of detail than

FRENCH GOTHIC

is the case with the English exterior (compare Plates XIV and XII). This is specially noticeable in the west front and the transept ends, but the east end, while not specially richer, has a very different appearance to that of its English counterpart. This is owing to the apsidal form previously mentioned, and to the great height of the vaulted interior which necessitates the vast radiating system of flying buttresses already described.

The difference of scale and proportion in the matter of height and length will be best realized by the following comparisons :—

	Internal height.	Exterior height.	Length.
Amiens . . .	140 feet	208 feet	460 feet
Paris	110 „	150 „	435 „
Westminster .	101 „	133 „	525 „
York	92 „	?	520 „
Salisbury . . .	81 „	120 „	460 „

In France nearly all the churches are stone-vaulted, it being rare to find an unvaulted one, and ornamental wooden roofs are unknown. In England this is quite the reverse, most of the parish churches are roofed with wood; Peterborough Cathedral has a wooden roof, and so has Ely over a great part of the building.

The interior of the French examples usually presents a much plainer appearance, and the detail of the carving, the mouldings, and the general arrangement of the ribs on the vaults are less beautiful than in the best English buildings. But such interiors as Amiens, Chartres, and Rheims produce a most imposing effect by their soaring lines and the majestic harmony of their proportions, and in the case of the last two by the loveliness of the stained glass.

It must be remembered that the French interiors did not require structural decoration to the same extent as the English

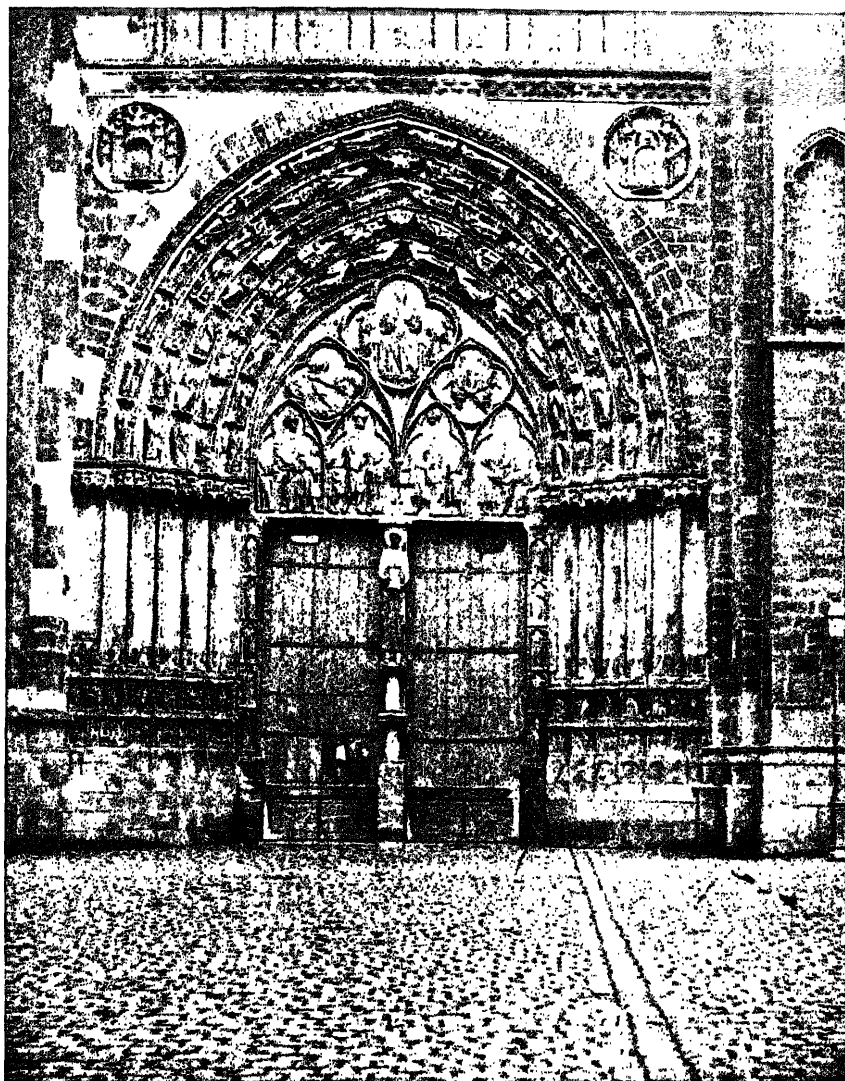


PLATE XVII.—SENS WEST PORTAL

interiors. Wall arcades with diaper and spandrel decorations as found in Early English and Decorated work did not exist, and for the reason that pictures, and later tapestries, of the most beautiful design were frequently placed on the blank wall surfaces throughout the entire church, as may now be seen in Rheims Cathedral. The windows were as a rule large, leaving



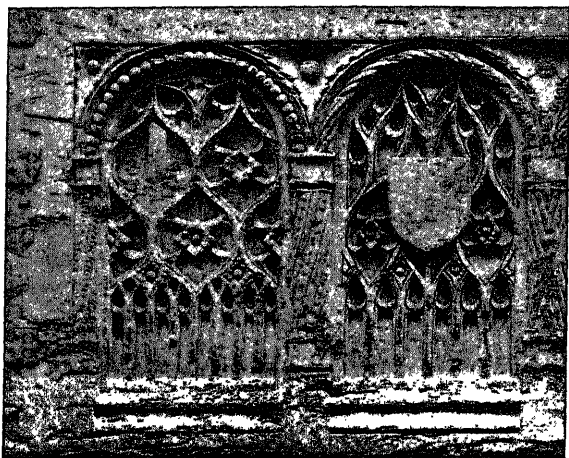
French Gothic Woodwork, Fifteenth Century

comparatively small blank wall space, and filled with most excellent stained glass, violet, blue, and red being the prevailing colours.

Excellent thirteenth-century glass is to be found in Chartres, the finest specimens are in the three Rose-windows. As in England, the French ecclesiastical buildings suffered serious damage by the hands of fanatics, if not quite to the same degree.

FRENCH GOTHIC

Early in the seventeenth century by the Huguenots, and again during the Great Revolution, when they turned the cathedrals into "Temples of Reason," there was great destruction done to the interior fittings and ornaments. Much disfigurement, if not positive destruction, was also caused by the erection of



Northern French Wood-carving, Fifteenth Century

mean houses and shops attached actually to the walls, and at times half blocking the windows of the mediæval structure. In some places churches have even been converted for municipal purposes or domestic use; in such cases the fabric has suffered considerably in adapting it for secular requirements.

Two illustrations are given of late French Gothic woodwork, showing panels with tracery of Flamboyant character.

CHAPTER XII

RENAISSANCE

CHAPTER XII

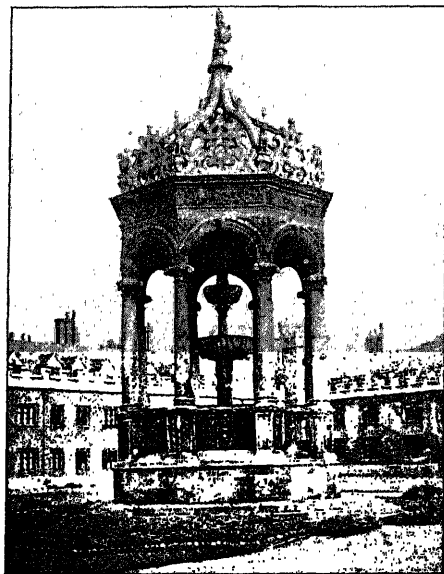
RENAISSANCE

THE Renaissance period of building throughout Europe, although of considerable importance, cannot be so attractive to the general student of Architecture as the style already outlined. At its best the style is an imitative one, and even in its most elaborate and extensive buildings it gives us nothing new, and at times applies borrowed details in questionable taste. It has been described by Ruskin as "the architecture of pride," and most fittingly so, as many of the Renaissance palaces in Italy were erected by nobles in ostentatious rivalry of each other and of adjacent cities. During the fifteenth century, when Florence became the head-quarters of the Renaissance, many palaces and other buildings were erected, aided by the Medici family, who employed their great wealth in the encouragement of Art. Two important architects of this period were Brunelleschi, who constructed the dome of Florence Cathedral (1420) and built the Pitti Palace in conjunction with Michelozzo (1440), and Alberti, who carried out the façade of S. Maria Novella (1455) and the Palazzo Rucellai (1460) at Florence.

Rome followed Florence in the development of Renaissance Architecture, but it was not until the beginning of the sixteenth century that any progress was made in this manner of building in that city. It will be sufficient here to mention the greatest

RENAISSANCE

and best-known Renaissance structure in the world, St. Peter's. Many architects were employed on this building, which took one hundred and sixty years to complete. Bramante started the foundations in 1506, and amongst others who followed him were Raphael, Michael Angelo, Vignola, and Bernini, who



Fountain, Trinity College, Cambridge

erected the colonnade which encircles the piazza in front. This wonderful building as a whole is not satisfactory, the façade being one of its worst points, bad in proportion, and shutting off the view of the dome from the front. The dome is the finest feature of the building, being 140 feet in diameter and rising to a height of 400 feet, a miracle of construction, of beautiful proportion, and bold in effect, expressing in the most admirable

manner the character of the great artist Michael Angelo who raised it.

As far as the sentiment of the Renaissance building is concerned, we entirely fail to trace the religious feeling so deeply impressed on us in Gothic work. The ecclesiastical structures at their best cannot dispel the pagan feeling forced upon us by pagan ornament. As well as the architecture of pride, it is the architecture of literature, in a dead language, with the rules of Vitruvius of 50 B.C. translated and used 1500 years later.

That Italy was the first country to be infected with the Renaissance style is not surprising, for Gothic Architecture was never deeply rooted in Italian soil; and the classic models were always ready to hand, although mostly mutilated by time and internal disruptions. No style, however, built on this foundation of copying can possess the same spontaneous character and interest that belongs to an original style. The architects now borrowed all their chief ideas, erecting their buildings by careful measurements of old examples. It is true, however, that decorative detail, although remaining classic in feeling, showed originality; and when in the hands of the most capable artists, such as Ghiberti and Donatello, their productions, used in the embellishment of the buildings, were of the highest merit.

Much greater freedom was shown in the treatment of the Renaissance style in England, but it was not until the middle of the sixteenth century that the Tudor style eventually gave place to the Elizabethan (1558) mode of building.

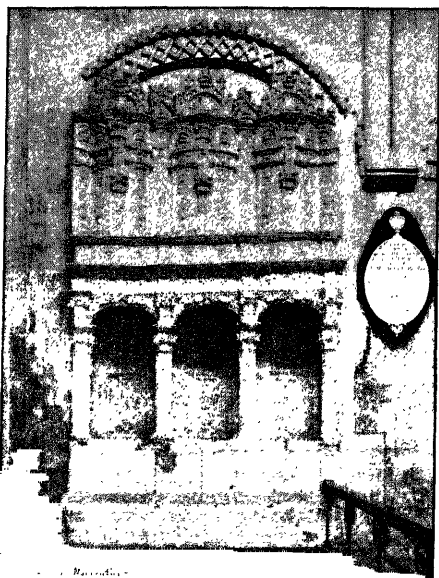
Most of the buildings up to this time retain their Gothic feeling, and the classic ornament grafted on to the Gothic structure is noticeable only in the smaller details; the column and pilaster had not yet been used as structural features; and the glorious Gothic vaulting had yet to be supplanted by the comparatively insignificant plastered ceiling.

The earliest Italian work in this country is to be found in the tomb of Henry VII in Westminster Abbey, which was executed

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in 1516 by the artist Torrigiano, who was invited to England by Henry VIII.

This Italian feeling, fostered and encouraged by Henry's Court, spread its influence, and everywhere we find tombs, as at Layer Marney, Essex, and Ashbourne, Derbyshire, in



Sedilia, Wymondham, Norfolk

the Italian manner. Such internal fittings were amongst the first to show this foreign style, and a most notable example in woodwork is to be seen in the screen of King's College Chapel, Cambridge (1535), which has been considered the finest specimen of Renaissance carving in the country.

It is therefore in the Gothic structure with the Italian ornament applied that the first touch of the Renaissance style is

visible in this country. During the Elizabethan or First Renaissance style in England many important mansions were erected, such as Kirby, Northants (1570), Penshurst, Kent (1570), Burghley, Northants (1575), and Holland House (1607). Of half-timbered houses Moreton Hall, Cheshire (1559), and



'The Feathers,' Ludlow

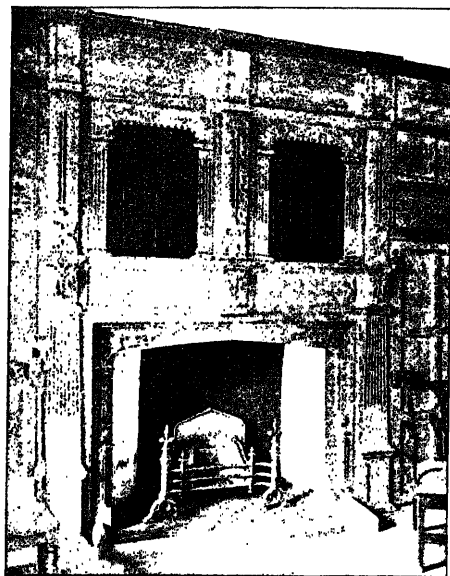
'The Feathers' at Ludlow are excellent examples. A much freer use of classic features was made in these mansions than was usual with the palaces abroad, and rules of measurement according to ancient models were not followed. Gothic features still prevailed in the openings, which were heavily mullioned with horizontal transoms across them.

That the character of a house is mainly determined by its

RENAISSANCE

planning is obvious, for the main lines of its elevation must be in accordance with the plan. The Elizabethan house was usually of the E or H shaped plan, the two ends being the east and west wings, and the entrance on the south front.

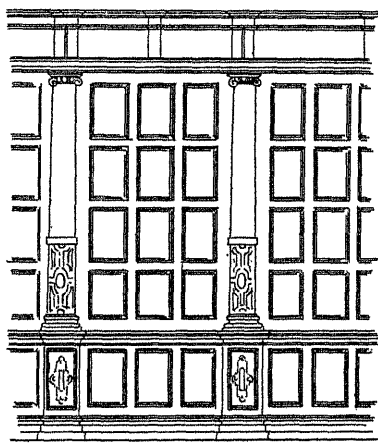
The most important and imposing part of these mansions was



Fire-place, Strangers' Hall, Norwich

as a rule the great hall, at one end of which was a carved oak screen, and above, the minstrels' gallery. The hall contained two fire-places of considerable size with much elaborate carving, usually the armorial bearings of the owner. The house at Compton Winyates, Warwickshire, has a large hall of this kind. Heraldic devices were favourite ornamental features at this time, and they are frequently met with carved in stone and wood, or

painted, with a curious strap-work pattern interwoven with these escutcheons. This strap pattern is the most typical detail in Elizabethan ornament ; and when the shields predominate the work is late, approaching more closely to the severe Anglo-Classic period (1620—1700). The main staircase leading from the hall to the upper apartments is frequently constructed of wood, and of great width, with handsomely-carved newel-posts and balustrading. The passion for panelling displayed by the

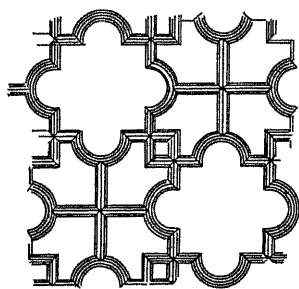


ELIZABETHAN PANELLING c.1600

Tudor architects in stone was continued by the Elizabethans in wood, the entire surface of the wall being covered with their oak panelling divided into compartments by pilasters, with frequently a narrow carved cornice at the top (see illustration above). At times this panelling was inlaid in simple patterns with ebony and box, making a pleasant variety of colour. Inlaid panelling of this kind may be seen in the room from Sizergh Hall, Westmoreland, now in the Victoria and Albert Museum. The panelling with large projecting mouldings, formed into lozenge

RENAISSANCE

and square patterns, came later in the style, denoting the work as Jacobean. The ornamental ceilings are of considerable importance, being worked in plaster with great skill. The



ELIZABETHAN CEILING CIRCA 1600

designs are as a rule based on geometrical lines forming repeating patterns, with small plaster rosettes at intervals. Colour was not much used, this defect being made up by the tapestries which were hung on the walls.

The exterior of the Elizabethan or Jacobean mansion has a most pleasing effect. Free in its treatment, there is no heaviness

in the appearance such as we find in the more severe Anglo-Classic houses. Broad terraces raised above the formal gardens lead up to the principal entrance, which is often of elaborate design with classic columns and entablature, and with stone mullioned windows above. The roof is frequently low, so that the ridge is invisible from the front, and a pierced balustrade runs round the top. The chimney-stacks are handsome features; if in stone they are, as a rule, treated in the Classical style, and if in brickwork they are cut and moulded into various patterns. Red brick was largely employed during this period, and a great number of sixteenth- and seventeenth-century houses, both large and small, are to be found all over the country. Barsham Abbey, Norfolk, is a good specimen of work in brick of this period.

Holland House, Kensington, erected in 1607, is a typical example, being designed by the famous architect John Thorpe, who is responsible for many of the best mansions of the early seventeenth century. Most of these houses, although quite pleasing and picturesque in effect, display on analysis imperfect

classic proportions and details; columns are shortened for the convenience of the height of the rooms, the pilasters are made to taper from the capital to their bases, and the classic mouldings and friezes are treated in the same free manner. Yet we



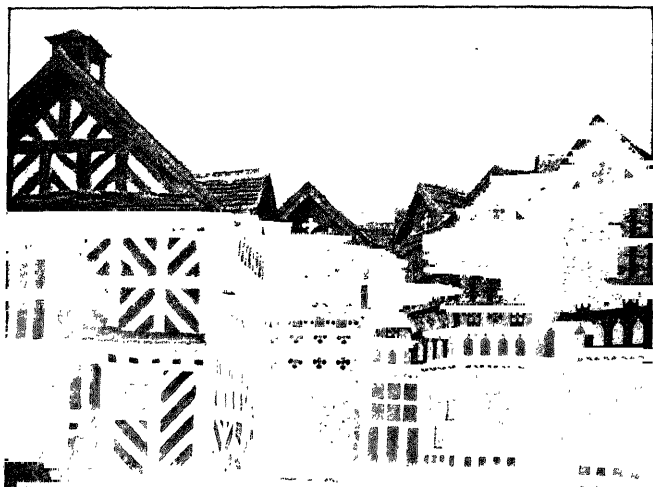
Barsham Abbey, Norfolk

cannot quarrel with this treatment, for if it destroys stateliness, it adds a lightness and charm, and makes the style possible for the small house as well as for the mansion.

The half-timbered houses at this time were most beautiful, and were smaller, as a rule, than the stone buildings. Cheshire

RENAISSANCE

and Shropshire are famous for their half-timbered houses, of which Morceton Hall, Cheshire (1550), and the Lodge, Stokesay Castle, Shropshire, are notable examples. The lead-work of the rain-water pipes and cisterns is most interesting, the initials of the owners and the date of the building, with other ornamental



Little Moreton Hall, Cheshire

details, being cast upon them. A good example of Renaissance work with characteristic Elizabethan ornament is given in the illustration of the fountain at Trinity College, Cambridge.

At the beginning of the seventeenth century a purer Renaissance style, that is, one in which classic orders are treated with more respect, came into vogue, and also the heavy regular style of Palladio (1560) being introduced by his pupil

Inigo Jones. However well adapted this style may be for a country like Italy, it is gloomy in the extreme in a city like London where the sun seldom shines for long periods. No foreign architect has influenced English Architecture so much



Doorway, Stony Stratford.

as Palladio, and Whitehall might well be called Avenue Palladio.

Inigo Jones (1572-1632) built the Banqueting House, Whitehall. His original scheme for a huge palace on this site, at the time free of important buildings, was never carried out on account of the enormous cost; it was to stretch from

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Charing Cross to the Palace at Westminster Bridge, and would have been one of the largest buildings in Europe. St. Paul's, Covent Garden, a cheap gaunt church with the Tuscan Order for the portico, is also by Inigo Jones. A doorway of this period, with Corinthian columns, is given on p. 159.

By far the greatest artist of the classic revival was Sir Christopher Wren (1632-1723). He had just shown his architectural genius when the great fire of London (1666) cleared acres of ground for him to start upon. His great work is St. Paul's Cathedral, built on the site of the old Gothic Cathedral destroyed by the fire.

This magnificent structure is worthy to rank with the finest Renaissance building on the Continent. As to construction, the dome is inferior to the dome of Florence (Brunelleschi) or of St. Peter's, Rome, being, in fact, a false dome round a central cone which supports the lantern above. But from the outside this is one of the most beautifully-proportioned domes in existence; and the west front is much more pleasing in effect than the principal façade of St. Peter's. The interior and external domes have no real connection, while this cone between them only serves for the superstructure. The construction is very skilful, though less truthful than that of Brunelleschi's dome at Florence, or of Michael Angelo's at Rome.

In addition to St. Paul's, Wren erected some fifty other churches in the City, one of the most notable being Bow Church, Cheapside, remarkable for its graceful steeple. Many minor architects followed after Sir Christopher Wren, but they have been almost entirely overshadowed by his genius. James Gibbs, who built St. Martin's, Trafalgar Square, and Sir John Vanbrugh, the architect of Blenheim Palace, were the most noteworthy.




Early in the nineteenth century a revival of Gothic Architecture was attempted, but the age was one of artistic inactivity, and an architectural genius in this style of building was badly

required. Augustus Pugin (1812-1852) did his utmost for the Gothic revival, but his death at an early age prevented his influence being widely felt. Sir Charles Barry (1795-1860, House of Parliament), Sir Gilbert Scott (1810-1877, St. Mary's Cathedral, Edinburgh), and G. E. Street (1824-1881, Law Courts) were all architects of the Gothic school, but none of their buildings are worthy to rank with Mediæval Gothic work.

In modern Architecture the most important building recently erected is the Roman Catholic Cathedral at Westminster by the late J. F. Bentley. It is Byzantine in character, being constructed chiefly of brick. A tall tower stands at the left of the principal façade, which has a large semicircular opening flanked on either side by turrets with cupola caps. This building has found much favour with experienced architects, but this Eastern style is foreign to the tastes of the general public; in addition, its cramped position prevents a general view being taken of the exterior. Other important works now in progress are the new Government offices in Parliament Street; the Victoria Memorial, St. James's Park, and the extension and principal front of the Victoria and Albert Museum, both under the charge of Mr. Aston Webb, R.A.

ILLUSTRATED GLOSSARY
OF
ARCHITECTURAL TERMS

GLOSSARY OF THE MOST USUAL ARCHITECTURAL TERMS ARRANGED ALPHABETICALLY.

- ✓ **ABACUS** . . . The upper member of a capital. In the Doric Order it is a simple square slab of stone, in the other orders it has mouldings  
carved on it. In Gothic it is very varied in shape, square, circular, or octagonal, with a variety of mouldings carved upon it.
- ✓ **ABUTMENT** . . . A solid mass of stone or brick against which an arch thrusts in a lateral manner.
- ✓ **ACANTHUS** . . . The leaves of a plant conventionally used in classic and Renaissance Architecture. It is found on the capitals of the Corinthian and Composite Orders. 
- ACROTERIA** . . . Horizontal slabs of stone placed on the apex and the lower angles of a pediment for the support of statuary.
- ✓ **AISLE** The side divisions of a church which run parallel to the nave. In England there are usually two aisles north and south of the nave. In foreign churches there are many examples of four, two on each side of the nave.
- ALA** Recesses on each side of a Greco-Roman house.
- ✓ **ALTAR** The Holy Table, dedicated for the use of the Holy Communion. They were usually made

GLOSSARY OF ARCHITECTURAL TERMS

of stone before the Reformation, afterwards,
in Protestant churches, of wood.

AMPHIPROSTYLE . . . A form of temple with portico both back and front.

✓ ANNULET . . . A narrow fillet or fillets encircling a column.

ANTEFIXÆ . . . Ornamental blocks of stone or tiles fixed vertically at intervals along the lower portion of a roof.

ANTHEMION. . . A term given to the Greek ornament based on the honeysuckle or palm leaf.

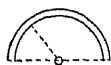
APOPHYGES . . The curves found at the top and bottom of the shaft, connecting it respectively with the capital and base.

✓ APSE . . . The semicircular or polygonal termination to the choir and aisles of a church. This apsidal termination is most usual in foreign churches. The usual form for the east-end termination in England is rectangular.

✓ ARCADE . . . Arches arranged in a series, either open or closed, supported by columns or piers. When closed they are called "Blank" arcades, and then serve for wall decoration only.

✓ ARCH . . . A construction of brick or stone arranged in a curve and capable of sustaining weight.

✓ ARCH . . . No. 1. Semicircular.



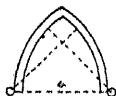
✓ No. 2. Semicircular Stilted.



✓ No. 3. Horse-shoe.

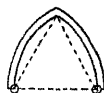


✓ No. 4. Lancet.

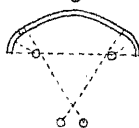


GLOSSARY OF ARCHITECTURAL TERMS

✓ ARCH No. 5. Equilateral.



No. 6. Four-centred.



No. 7. Trefoil Round.



No. 8. Trefoil Pointed.



No. 9. Ogee.



✓ ARCHITRAVE . . . The lowest division of an entablature, resting on the capital; used also to denote the outer mouldings which enclose a door or window.

✓ ARCHIVOLT . . . The under surface mouldings of an arch from the impost on either side. When the archivolt is quite plain, without any mouldings, it is more usually termed a "Soffit."

ARRIS The sharp edge formed by the meeting of two curved surfaces, such as in the flutes of the Greek Doric.

✓ ASTRAGAL . . . A small semicircular moulding or bead.


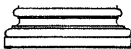




✓ ATLANTES . . . Male figures serving as pillars of support, called also "Telamones."

ATRIUM . . . A large apartment approached directly from the entrance hall or vestibule (see p. 31).

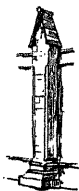
ATTIC The highest storey of a classic building, usually above the main cornice. The term is now applied to rooms in the roof.

GLOSSARY OF ARCHITECTURAL TERMS

- BALL-FLOWER** . . . The berry ornament used during the Decorated style (see p. 79).
- BALUSTER** . . . A small pillar supporting a hand-rail or coping. A series of balusters forms a Balustrade. 
- BAPTISTERY** . . . A portion of an ecclesiastical building set apart for baptisms.
- BASE** The lower part of a column, pier, or wall, etc.  
- BASILICA** A term used by the Romans for their public halls and court-houses.
- BATTLEMENT** . . . A wall notched at regular intervals, originally intended for purposes of defence; it was afterwards employed (as in the Perpendicular period) for decoration only. *See Embrasure.*
- BAY** The divisions or compartments marked out by the arrangement of the piers or pilasters of a building. On the outside the bays are marked out by the projecting buttresses.
- BEAD** A small semicircular moulding similar to an astragal. When employed in a series close together they are called "Reedings."
- BEMA** A raised platform reserved for the clergy in Early Christian churches; it formed the idea for the transepts in latter Architecture.
- BILLET** A Norman round moulding cut into notches. 
- BOSS** Ornaments covering the intersections of the ribs of ceilings whether vaulted or flat; also carved ornamental blocks as terminations to the hood mouldings of doors, windows, and niches.
- BRACKET** A projection supporting the upper members of a cornice. In Gothic the bracket is chiefly

GLOSSARY OF ARCHITECTURAL TERMS

used to support a statue, and is ornamented with mouldings and carving.



- ✓ BUTTRESS A solid mass of masonry projecting from the wall to resist the pressure of an arch or vault.

- BYZANTINE The Byzantine style of Architecture is the mode of building that was adopted at Byzantium in the fifth century.

- ✓ CANOPY A decorated projection over doors, windows, tombs, and niches; they were chiefly employed in the Decorated and Perpendicular periods.

- ✓ CAPITAL The upper feature of a column or pilaster.

- ✓ CARYATIDES . . . Female figures used as columns or supports, as at the Erechtheum, Athens.

- CAVETTO A hollow moulding, a quadrant of a circle in section.

- ✓ CEILING The under covering of a roof, concealing the timbers from below.

- CHAMFER Where the angle or arris of a wall or moulding is cut off. When the chamfer is very wide it is called a "Splay."

- CHANCEL The portion of a church arranged for the clergy and choir. It was usually separated from the nave by a screen and steps.

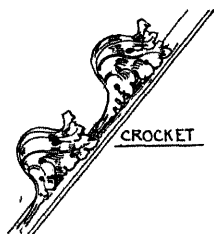
- CHAPTER-HOUSE . Attached to most of the cathedrals, and used as a place of assembly for the clergy and church officials.

- CHEVET The term applied to the circular or polygonal termination of a church. (The term "Apse," already described, is used in the same way.)


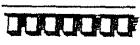

- CHOIR See Chancel.

GLOSSARY OF ARCHITECTURAL TERMS

- CLERESTORY . . . The upper division above the triforium, directly lighting the nave of the church.
- ✓ CLOISTERS . . . Covered passages connecting the minster with the other parts of the monastic establishment. These passages are arranged in quadrangular form, with a large open space in the centre called the "Garth."
- ✓ COFFERS . . . Deep panels in a ceiling. The term is often applied to large oak chests for keeping the church vestments, plate, etc.
- ✓ COLUMN . . . A vertical support consisting of base, shaft, and capital. (Note, the Greek Doric column has no base.)
- CONSOLE . . . *See* Bracket.
- ✓ COPING . . . The uppermost course of a wall, usually sloped to throw off the water.
- ✓ CORBEL . . . A Gothic term denoting a projecting stone or piece of wood supporting a weight. When corbels are used to support a projecting wall or parapet it is called a "Corbel-table."
- ✓ CORNICE . . . The crowning moulded projection of a building. In classic Architecture the upper member of the entablature.
- CROCKETS . . . Carved leaves or bunches of foliage used in Gothic Architecture on the angles of spires, pinnacles, canopies, etc.
- CRYPTS . . . The basement of a church; they are generally placed under the chancel. One of the most extensive crypts is under Canterbury Cathedral.



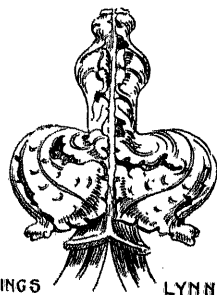
GLOSSARY OF ARCHITECTURAL TERMS

- CUSPS The projecting points of Gothic tracery. 
- CYMATIUM . . . The capping or crowning member of a cornice. A term confined to classic Architecture.
- ✓ DADO The middle member of a pedestal.
- DECASTYLE . . . A portico with ten columns.
- ✓ DENTILS . . . Tooth-like block ornaments used in the bed moulding of Ionic, Corinthian, and Composite Orders. 
- ✓ DIAPER . . . Any small pattern continuously repeated on a flat surface.
- DIPTERAL . . . A temple flanked with a double row of columns. "Pseudo-dipteral" when the inner row of columns are attached to the side walls.
- ✓ DOG-TOOTH, or "TOOTH" ORNAMENT. A name given to an ornament extensively used in the Early English style. 
DOG TOOTH. EENG.
- ✓ DOME Properly a "Cupola," a hemispherical-shaped covering over a circular plan. Example, St. Paul's Cathedral.
- ✓ DORMER . . . A window inserted into the roof of a building, with a gable over it.
- ✓ DRIPSTONE, HOOD MOULDING, or LABEL. A projecting moulding over the heads of doorways, windows, etc. Usually found in external work, its purpose being to throw off the rain.
- ✓ EAVES The lower portion of a roof projecting over the wall.
- ✓ EMBRASURE . . The crenelles or intervals between the merlons of a battlement.

GLOSSARY OF ARCHITECTURAL TERMS

- ✓ **ENTABLATURE** . . . The portion of a classic building supported by a colonnade, comprising the architrave, frieze, and cornice.
- ENTASIS** . . . A slight swelling on the shaft of a column to prevent the appearance of hollowness in its sides when several columns are used together, as in the Parthenon.
- ESCUTCHEON** . . . A shield with armorial bearings upon it. This term is also applied to the plate on a door from which a handle hangs, or through which the key of the door is inserted.
- EXEDRA** . . . An assembly-room, or hall of conversation, towards the end of the peristylum.
- ✓ **EXTRADOS** . . . The outer curve of an arch, as opposed to the "Soffit" or "Intrados."
- ✓ **FAÇADE** A French term for the exterior face of a building.
- ✓ **FAN-TRACERY** or **FAN-VAULTING**. A system of vaulting peculiar to English work used in late Perpendicular work. The ribs that rise from the springing of the vault radiate equally, producing somewhat in effect the ribs of a fan.
- FASCIA** A flat band or very broad fillet used in the architrave of the classic entablatures.
- ✓ **FILLET** A narrow flat band used to separate mouldings from each other. In Gothic Architecture fillets are frequently worked on other large mouldings (see p. 79).

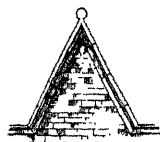
✓ **FINIAL** The finishing ornament of a pinnacle, canopy, bench end. The carvings on the end of wooden benches are frequently called "Poppy-heads."



GLOSSARY OF ARCHITECTURAL TERMS

- ✓ **FLAMBOYANT** . . . The third period of French Gothic, denoting the flame-like wavings of the tracery in the fifteenth-century work.
- FLÈCHE** . . . The wooden spire, as a rule open work, surmounting a roof.
- ✓ **FLEETINGS** . . . The hollows vertically cut on the shaft of a column.
- ✓ **FRIEZE** . . . The centre flat portion of the entablature beneath the cornice and above the architrave. This portion is usually decorated with sculptured reliefs.

- ✓ **GABLE** . . . The triangular-shaped space of wall bounded by the two sloping sides of a roof. Small ornamental gables such as are found in tabernacles and niches are called "Gablets."



- GALILEE** . . . A porch used as a chapel for penitents and pilgrims, built as a rule near the west end of abbey churches, such as at Durham, Ely, and Peterborough Cathedrals.
- GARGOYLE** . . . A projecting stone or lead spout to throw the water off the roof clear of the walls. They are often most grotesquely carved.
- GROIN** . . . The angle formed by the intersection of vaults, usually ribbed.
- GUILLOCHE** . . . A classic ornament of circular form interlacing in a network pattern.
- GUTTE** . . . Small pyramid or cone-shaped ornaments found on the Doric entablature.

- HAMMER-BEAM ROOF.** A special form of wooden roof frequently used in the Perpendicular and Tudor periods. The tie-beam of an ordinary Queen-post

GLOSSARY OF ARCHITECTURAL TERMS

truss is cut away in the centre, the remaining portions projecting from the walls forming the Hammer-beams. On p. 118 will be found an excellent Hammer-beam roof from Cawston Church, Norfolk.

- ✓ **HEXASTYLE** . . . A portico which has six columns in a row.
- HOOD MOULD** . . . See Dripstone.
- ✓ **HYPÆTHRAL** . . . Without a roof, a building with a central space open to the sky.
- HYPOSTYLE** . . . A hall with several pillars, such as the Hypostyle Hall at Karnac, Egypt.

IMPLUVIUM . . . A tank sunk in the floor of the atrium in private houses (as at Pompeii) intended for the rain-water, which flowed through the "Compluvium," or opening above in the roof.

- ✓ **IMPOST** The mouldings on the top of the pier or pillar from which the arch springs.



- ✓ **INTRADOS** . . . The soffit or under surface of an arch. See Extrados.

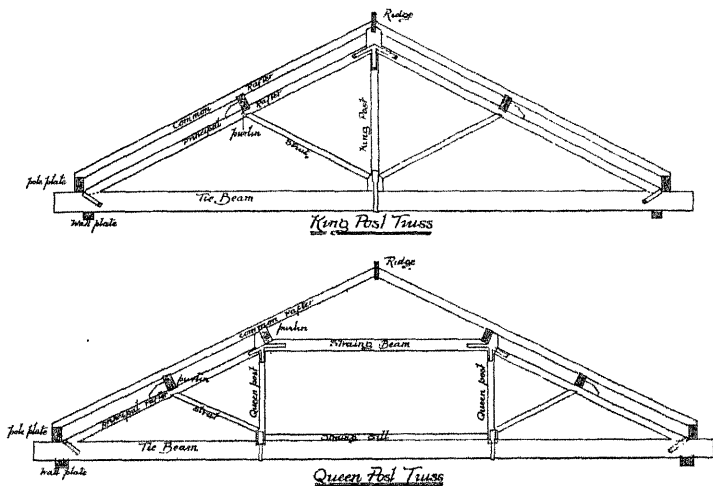
- ✓ **JAMBS** The side masonry, or woodwork, of the openings of doors, windows, etc.

- ✓ **KEystone** . . . The wedge-shaped central stone at the apex of the arch.



- KING-POST** . . . A vertical beam extending from the tie-beam to the ridge of the roof. A wooden roof of this kind is called a "King-post" truss. A "Queen-post" truss has two of these vertical beams.

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LABEL See Dripstone.

LANCET ARCH . . A sharp-pointed arch of the Early English period (see illustration, "Arches").

LIERNE RIB . . . The intermediate and smaller ribs between the main vault ribs.

✓ LINTEL The horizontal piece of stone or timber over an opening, and carrying a weight above it.

LOGGIA An open gallery on the outside of a building.

METOPE The space between the triglyphs on the Doric frieze.

MISERERE A seat jointed to turn up. In mediæval examples the under sides of these seats are often elaborately carved.

MODILLIONS . . Projecting curved brackets under the corona of the Corinthian and Composite Orders.



MODULE The measure by which the parts of the orders

GLOSSARY OF ARCHITECTURAL TERMS

are set out. The semi-diameter of the shaft at its base is usually considered as one module, which is divided into thirty parts called minutes.

MOULDINGS . . . The contours cut upon projecting angles of various parts of a building, etc. (see illustration, p. 79).

MULLIONS . . . The vertical moulded divisions between the lights of a window, screen, etc.

MUTULE . . . The projecting inclined blocks on the Greek Doric cornice, usually ornamented with guttæ.

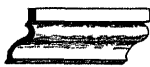
NAOS The inner chamber of a temple (see p. 31).

NAVE The central part of the church, extending from the west end to the choir.

NEWEL or NEWEL-POST. The central column, around which the steps of a circular staircase wind.

NICHE A recessed compartment in a wall to take a statue, base, or other ornament; piscinas were placed in niches near the altar.

OCTASTYLE . . . A series of eight columns in a portico.

OGEE A shape of moulding, a combination of round and hollow form. Also a name given to an arch of  "Ogee" shape.

OPISTHODOMOS or POSTICUM. An open space or vestibule behind the cella of a temple (see p. 31).

ORDER Consists of a column complete, supporting an entablature.

ORIEL A window corbelled out from the face of the wall, introduced in Tudor work and most usual in the Elizabethan period.

OVOLO A convex moulding.



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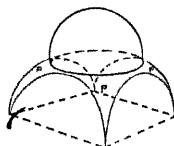
PANEL The compartments formed by the framing in of spaces on walls by stone or timber.

PARAPET . . . The upper portion of a wall above the gutter of a roof. It may be embattled or plain. The embattled parapets were originally intended for purposes of defence.

PARVISE A large porch with a room over it (see p. 115).

PEDIMENT . . . The triangular end over the portico of a classic building. In Gothic Architecture this feature is called a "Gable."

PENDENTIVE . . The curved surface by means of which a circular or octagonal dome is supported over a square compartment.



PERIPTERAL . . A temple or other buildings surrounded by columns clear of the walls. If the columns are attached to the walls the building is "Pseudo-peripteral."

PERISTYLIUM . . The second or inner chamber of a Roman dwelling, with columns arranged round the four sides.

PIER A mass of masonry supporting an arch or beam.

PILLAR Often confounded with the true pier, as it usually serves the same purpose. It differs from the classic column as not necessarily of circular form or bound to possess either capital or base; in mediæval work, however, they usually possess both.

PILASTER . . . A rectangular-shaped pillar of small projection from the wall to which it is attached.



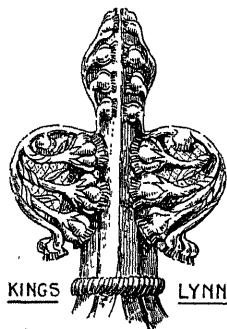
GLOSSARY OF ARCHITECTURAL TERMS

PINNACLE . . . A turret usually narrowing towards the top. Much used in Gothic work as terminations to buttresses, towers, etc.

PISCINA . . . A niche with a basin cut in the structure, with a hole in it to carry off water. The piscina is used by the priest for cleansing the chalice after celebrations of the Eucharist (see p. 83). It should not be confounded with the holy-water stoups which are always placed at the entrance to the church.

PLINTH . . . A low square block on which the column stands, also the projecting surface at the bottom of a wall.

POPPY-HEAD . . The carved finial-shaped ornament used on the tops of the upright ends of seats and stalls.



PORCH . . . A shelter placed over the doorway of a building. Porches are most frequently placed on the south side of the church ; large churches have north porches also.

PORTICO . . . A series of columns arranged regularly in front of a building. When of four columns, Tetrastyle ; when of six, Hexastyle ; of eight, Octastyle ; of ten, Decastyle.

PRONAOS . . . The chamber in front of the naos in a temple (see p. 31).

PULVINATED . . When the frieze is convex in profile, as in the

GLOSSARY OF ARCHITECTURAL TERMS

Composite Order (see p. 17), it is said to be
"Pulvinated."

- QUATRE-FOIL . . . In tracery a panel or part of a window with four cusps.
- QUEEN-POST . . . *See* King-post.
- QUOIN The external angle of a building, or the large dressed stones forming such an angle.
- REFECTORY . . . The dining-hall of a monastic or convent establishment.
- RENAISSANCE . . The revival throughout Europe of classic forms in Architecture during the fifteenth and sixteenth centuries.
- REREDOS The decorated wall or screen at the back of the altar.
- RIB A projecting moulded band on a ceiling. In vaulted roofs the ribs are placed on the angles dividing the vaults into compartments or severies.
- RIDGE The top external line of a roof running from end to end, frequently decorated with ornamental ridge tiles.
- ROOD A cross or crucifix.
- ROOD-LOFT . . . The gallery or screen erected between the chancel and the nave and carrying the "Rood."
- ROOF The top covering of a building, formed of wood, stone, brick, or concrete, overlaid with tiles, slates, or lead. In timber roofs, which are of several varieties, the main portions of the framing are called "Principals" or "Trusses," the most common being the King-post or Queen-post truss, which the illustration on p. 175 will explain.
- ROSE-WINDOW . . A circular window; called also "Wheel-window."

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ROUGH-CAST . . . Coarse plaster freely sprinkled with small pebbles used on the outside of buildings.

SACRISTY . . . A room attached to a church where the church plate and vestments are kept, placed in charge of an official called a Sacristan.

SANCTUARY . . . The portion of the chancel where the altar is placed, divided from it by a few steps.

SEDILIA Seats placed in the choir for the use of the clergy (see p. 83).

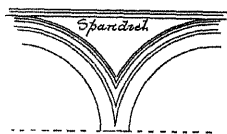
SEVERY A bay or compartment of a vaulted ceiling.

SHAFT The portion of a column between the base and capital.

SOFFIT The under side of an arch or any other architectural member.

SPAN The distance between the supports of an arch.

SPANDREL . . . The triangular-shaped spaces above the curve of an arch and the horizontal moulding or band above.



SQUINT An oblique opening through a wall in the direction of the altar for persons in the transepts or aisles to see the Elevation of the Host.

STEEPLE This term is applied to the tower and spire of a church, but not to a tower uncrowned by a spire.

STOA The Greek term for a portico.

STYLOBATE . . . The structure on which a colonnade is placed.

SURBASE The upper mouldings on a pedestal.

TABLINUM . . . One of the chief apartments in a Roman house adjoining the atrium.

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TENIA The broad fillet forming the upper member of the Doric architrave.

TETRASTYLE . . A portico of four columns.

TOOTH ORNAMENT The characteristic ornament of the Early English style. *See* Dog-tooth.

TORUS A large round moulding.



TRABEATED Architecture is that in which the beam construction forms the type. Greek Architecture is a trabeated style.

TRACERY The ornamental patterns found in the heads of windows, niches, panellings, etc. The most distinctive feature of Gothic Architecture.

TRANSEPT The part of the church at right angles to the nave, marking the arms of the cross in the ground plan of a church.

TRANSITION . . . The changing process from one style to another.

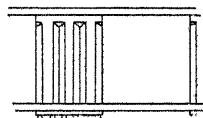
TRANSOMS The horizontal divisions in a window or a panel, frequent in the Perpendicular period.

TREFOIL Three-lobed cusplings in the heads of windows, doorways, etc.



TRIFORIUM The space above the nave arcade, or the first storey in a Gothic church. Treforia are only found in large churches.

TRIGLYPH An ornament peculiar to the Doric frieze.



TRUSS A collection of timbers braced together forming the principal supports in a roof, carrying the purlins and common rafters.

TYMPANUM The space bounded by the raking cornices of a pediment, or between a lintel and an arch over it.

GLOSSARY OF ARCHITECTURAL TERMS

- V* VAULT The covering in arch form in stone or brick over any space (see chapter on Vaults, p. 121).
- V* VOLUTE The scroll occurring in the Ionic and Corinthian capitals.
- V* VOUSSOIR The wedge-shaped blocks forming the arch, the keystone being the central uppermost block.
- W* WHEEL-WINDOW . A circular window with mullions radiating from the centre.

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